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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

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Circular 70

Land Drainage in New York

BY

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LAND DRAINAGE IN NEW YORK

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The necessity for reasonable drainage of the soil for the production of nearly all of the common farm and garden crops is recognized by all persons connected with agriculture. Farmers generally know that a saturated condition of the soil is unfavorable for the growth of the staple plants. As to what constitutes reasonable drainage of the soil there is much difference of opinion. This fact is especially evident when one studies the farm land of the state in the light of the results of modern investigation into the causes of soil fertility.

To the mind of some persons land is well drained if its surface has a good slope. Land, on the surface of which water does not stand during most of the crop season, may seem well drained. Continued saturation during the winter or protracted periods of subsoil saturation in the summer does not seem particularly objectionable to such minds.

On the other hand the fact is that land which is intermittently wet for two or three days at a time is the cause of much greater loss to the farmer than occurs on land which is flooded the year round and is commonly known as swampy. Such land is let alone and not used for farming purposes until it is at least partly drained. On the other class of land — that which is intermittently wet — any attempt that is made to use it for tilled crops, entails a loss of labor, seed and fertilizers which cuts deeply into profits.

EXTENT OF SWAMP LAND IN NEW YORK

There are about twenty-five hundred square miles of swamp land in New York. This is distributed in many scattered small and large areas found in nearly every part of the state. Some of it is tidal salt marsh around New York and on Long Island but the greater part is upstate. Of this area about eight hundred square miles is composed of muck soil, and it is in this kind of land in particular that financial interests are concerned. Nearly all the soil in areas not classed as muck is dark in color due to the accumulation of organic matter, and will usually produce good crops when drained.

LAND THAT IS PERIODICALLY WET

The real agricultural drainage problem, however, has to do with those large areas of land that are now used for farming purposes but which are too wet to give good crop yields. It is the land that is springy and seepy, the land where fruit trees are missing, singly or in blocks, the land where the corn is weak and patchy, where the wheat freezes out and the grass is supplanted by plantain in large, blotchy areas. A large part of the tilled area of the state falls within this class in that it needs more or less drainage. A careful study of soil types in several counties shows the proportion of such land to range from 43 per cent. in Dutchess County to nearly 60 per cent. in Niagara County and over 80 per cent. in Livingston County. We would not be understood to say that all this area needs systematic drainage, but rather that a considerable amount of drainage is needed to prevent needless waste and increase net returns.

SOME TYPES OF WET LAND

Flat clay land generally needs systematic drainage. Such land occurs in the large areas in the central part of the state along lakes Erie and Ontario, in the St. Lawrence Valley and in the Champlain and upper part of the Hudson Valley as far south as Newburgh. Drainage of such soil is needed because its fine texture causes water to circulate very slowly. It is likely to be retained so long that the productive capacity of the soil is reduced.

In the same regions where the clay soils occur, there are many other soil conditions that may be wet. There are terraces of gravelly and sandy loam that are often wet along the base due to the water that has percolated down from the top soil, being brought out to the surface by some impervious substratum. There may be the outcrop of some porous strata through which the water moves freely. On the hillside this produces a seepage line or zone of wet soil.

There are large, rounded hills of stony loam soil that often contain wet areas. Their structure consists of glacial till interstratified with layers and pockets of gravel and sand in which water accumulates. The drumlin-shaped hills typically developed in Wayne County are of this sort. Springs and wet areas are of frequent occurrence.

Some of the most misleading soil in reference to wetness is found in the hill lands of southern New York. Much of that land has a good slope and sometimes it is almost precipitous. The slope would seem to insure good drainage but the structure of the soil is such that good drainage does not exist. Much of the land has a moderately porous soil underlain by an impervious or hardpan subsoil. The rainfall is absorbed into this loose topsoil and trapped by the subsoil so that it is removed only by slow percolation and by evaporation. In addition springs are of common occurrence and spread down the slope in the form of a fan of wet soil.

Many other special types of wet soil occur but the above covers those that are most frequently met. Indications of wet soil are "heaving" in winter, failure of seed to germinate, bare patches or missing trees, pale green leaves, slow and stunted growth of crops and either a black or a pale, washed-out mottled color of the soil. Also the tendency to puddle and become lumpy under tillage are further evidences of wetness.

EFFECTS OF DRAINAGE

The reasons for the importance of thorough drainage will be better understood after a consideration of the far-reaching effects of drainage upon nearly all the factors of soil fertility.

1. The first effect of drainage is to remove the excess of water from the pores in the soil and replace it with air. This means better soil ventilation. Ventilation is as essential for the roots of most plants as it is for animals. Cut off their air supply by submersion or other means and the roots of plants soon die. Intermittent wetness does exactly this. There is a repeated pruning of the small roots as the soil changes from a dry to a prolonged wet condition. By producing deeper drainage and better ventilation, artificial drainage promotes deeper penetration of the roots of plants.

2. The tilth of the soil is improved and less cultivation is required to get the soil in condition for a crop. Drainage is the first requisite for good tilth and the efficient use of tillage implements. Not only can the land be worked sooner after each rain but it can be worked more days in the year. Consequently a less equipment of tools, teams and men is required to handle a given area of well drained than of wet land. The waste of energy and returns is especially large where there are wet spots. All the soil is never in condition to work at the same time and the crop does not ripen evenly. These conditions entail increased cost and reduced returns.

3. Drainage does not remove any water which would be beneficial if it remained. It removes the static water. On the other hand the improvement of the tilth of the soil and the deeper penetration of plant-roots make a larger amount of film water available to the crop. On drained land crops usually stand dry weather better than on intermittently wet land. Go into the corn field in August after a dry spell and one can pick out the wet spots by the curled leaves.

Near the surface of the soil the fluctuation in the moisture content is greatest. Deep in the soil the supply is more uniform. Consequently the deeper crop roots can maintain themselves the more uniform is their water supply likely to be.

4. Drainage results in a higher average temperature of the soil and in a quicker warming in the spring. The difference in warmth between sand and clay soil is due to their different capacities to hold water. Either kind of soil is cold and late when saturated with water. A low temperature hinders the starting of seed and growth. A drained soil may be eight or ten degrees warmer than the same soil undrained.

5. The supply of available plant-food is increased by the better ventilation, higher temperature, deeper root penetration, better tilth, better moisture supply, and the more active and favorable bacterial growth in the soil, all of which conditions result from improved drainage of a wet soil. The organisms that cause the decay of roots and manure and those that use the free nitrogen of the air are particularly affected in a beneficial way. All these

benefits help to reduce the need for commercial fertilizers, thereby affecting a material saving to the farmer, which saving goes on from year to year.

6. The winter "heaving" of plants is largely prevented by drainage. "Heaving" is due to the freezing of water in a saturated soil. Water in freezing must expand and since in the process it can not expand in any other direction it is manifested in lifting the surface. It carries small plants with it. When the ground thaws the soil falls back around the roots. Each time the freezing is repeated, the "heaving" is increased, and on wet land in some seasons tap roots like clover may be raised to the extent of twelve or fifteen inches, and literally spewed out of the soil and left on the surface to dry up. All winter crops are particularly subject to this type of injury which is frequently called "winter-killing." Wetness is its cause and drainage the remedy.

PURPOSE OF DRAINAGE

The object of drainage is to quickly remove from the root-zone of the soil the excess of water above that which may be retained in thin films on the soil particles and commonly known as capillary water. Any sort of a channel which accomplishes this purpose is effective and many methods of drainage may be employed. Some are less efficient and permanent than others.

OBJECTION TO SURFACE DITCHES

Surface ditches and canals are used where temporary results are desired, or where a large volume of water must be moved. For agricultural purposes the common surface ditches or furrows are of low efficiency and very expensive. They do not remove the water from a sufficient depth of soil, their grade is usually poor and the water flows slowly or not at all, or if it flows rapidly cutting results. The earth thrown out in forming the ditch hinders the entrance and removal of water; the ditch obstructs the surface, interferes with tillage and harvesting operations and harbors weeds Further, such ditches must be renewed from year to year, all of which make them more expensive over a period of years than covered drains.

DIFFERENT METHODS OF CONSTRUCTING COVERED DRAINS

Poles, brush and stone have been used in constructing covered drains and have done good service in affording drainage. Their use was much more permissible in former years than at present when a good quality of drain tile can be had in most sections of the country. All those materials have the disadvantage of short life and often high cost for construction. If stones are used they had best be arranged without any definite throat. The ditch should be relatively large. The stones should be dumped in promiscuously except that the small, flat stone should be on the top and bottom. The water finds its way through the large spaces and the small stone on top reduce the danger of clogging. Flat stone may be arranged face to face with the flat sides parallel to the walls of the ditch. The top should be covered with small, flat stone.

TILE DRAINS; THE BEST QUALITY OF TILE

The preeminent material for modern land drainage is tile. They come in different shapes and of different quality. By a process of evolution we have come to prefer round or hexagonal shaped tile because they are easiest to lay and least likely to clog. They may be made of burned clay or of concrete. Clay tile may be either vitrified or unvitrified. The former is most durable because its walls are least porous. The difference lies in the quality of clay used and the degree of heat applied in burning. Vitrification means partial melting of the clay particles which run together in a very dense mass. A low degree of porosity coincident with a moderate degree of vitrification is especially desired where the tile is likely to freeze. In the soil the pores in the tile become filled with water and if it freezes in this condition the walls of the tile may be fractured and broken up into scales. If only one or two tile in a long line are thus destroyed the service of the drain is jeopardized. Since vitrified tile cost no more on the average than soft tile, there is no excuse for taking the risk in using the soft tile.

The drainage efficiency of the tile is not affected by the difference in the porosity of the walls since the water enters at the joints.

Cement tile that are of fairly good quality may be made by hand or in machines. It is doubtful if they can be made as durable as the best clay tile. They should be carefully made of a rich mixture. A sand a little loamy improves the quality if the mixing is thorough, as it reduces the amount of pore space. Whether they can be made at prices to compete with clay tile depends on the size made and the local situation in labor and materials for the two kinds of tile.

Only sound tile giving a true ring should be put in the ground. The ends should be reasonably square and smooth so that a good joint can be made. This is most important when laying tile in soil of a quicksand nature. Here special precautions against clogging is necessary.

PROTECTION OF JOINTS

The upper half of the joint should either be very close or should be covered with a strip of tar paper or burlap or a handful of thick cement mortar. This will force the water to enter from the under side of the joint. In heavy clay soil a very close joint is not desirable and openings up to an eighth of an inch are permissible, especially if the upper part of the joint is protected, as indicated above. Collars and bell-shaped ends like sewer tile are not necessary, although the latter may be serviceable in soil inclined to afford a soft bottom on which the tile rest. Such construction will protect the alignment.

ARRANGEMENT OF DRAINS

The arrangement of the drains will, of course, always depend upon the structure of the soil and the slope of the land which determine the direction of movement of the water. The aim should be to intercept the flow of the water and remove it from the land by the shortest practicable course.

On flat land the drains must generally be arranged in more or less parallel lines at such intervals as will accommodate the soil. Their purpose is to remove the water derived from rainfall upon that area. In clay land they may be from forty to sixty feet apart for the common field crops. On sandy soil that is moderately porous they may be from eighty to one hundred and fifty feet apart. For intensive cultivation, as in growing truck crops, a greater frequency may be justified. Where the surface is undulating and where there are strata more porous than others so that the surface or the underground water is concentrated, the drain should be located only after careful study to determine the way in which the water moves. Much land that is undulating is particularly wet only in the low places and a line or two of tile through these will suffice. Sometimes surface water from hill sides accumulates at the foot of the slope and spreads out over the low land. In that case there should be a drain near the foot of the slope. If there is seepage from the hillside the drain should be cut near the upper edge of the wet soil and should be deep enough if possible to let the tile be laid on the impervious substratum and thereby intercept the flow. Whether the drains shall be laid across the slope or down the slope depends much on the local conditions. In many cases an arrangement diagonally across the slope at a high angle is best as it combines many of the advantages of both the other arrangements.

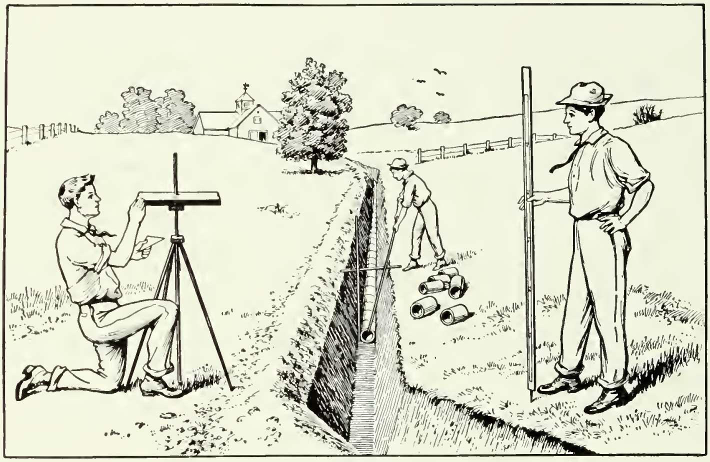

FIG. 111. SURVEYING FOR A LINE OF DRAIN TILE WITH A HOME-MADE LEVEL

Clearly defined springs should be topped by the most direct route. If the water seeps out of a considerable area around the spring, Y-shaped spur drains may be helpful.

DEPTH OF DRAINS

The depth of drains will range from about twenty inches up to three and a half or four feet. The most common depth is from two to three feet. In sandy land the drains may be placed deeper than in clay land. Up to a depth of four feet an increase in the depth of the drain will permit an increase in the interval between drains of about two rods for each foot in depth. In clay land an increase in the depth of laying the tile will usually not permit an increase in the interval between drains.

GRADE

Drains must always have some grade to insure the flow of water. If the direction or extent of the natural grade is questionable a leveling instrument should be used to determine the conditions. Often a home-made instrument using a carpenter's level is very serviceable.

A very small grade will suffice for the flow of water in a tile. Tile drains will operate on a grade of a half inch per hundred feet but a fall of six inches to a foot per hundred feet is much more desirable. The less the fall the more careful must be all the construction to insure permanency, and relatively larger tile must be used. In soils of a quicksand nature it is important that the lateral drains should have no greater grade than the main or that silt wells be constructed at intervals to collect the sediment and permit its removal.

SILT WELLS

A silt well is a pit in the course of the drain, the bottom of which extends two or three feet below the line of tile. The water comes in at one side and goes out at the other. Any coarse material will settle to the bottom. One or two sections of sewer tile placed on end with junction connections make the most simple and permanent construction. Surface water may to advantage be admitted through the silt wells, thereby protecting the system of drains from surface wash.

SIZE OF TILE

The size of tile, will, of course, vary with the area drained, the grade and presence of surface and underground courses. The tendency of the day is to increase rather than decrease the minimum size of tile used. In general, tile smaller than three inches should not be used. From that size they will increase according to the extent of the system. It is not now uncommon for tile as large as two feet in diameter to be used. Three-inch tile in lines not more than six hundred feet long are usually best for lateral drains. Up to fifteen hundred feet a four-inch tile may be used, providing the grade is not less than four inches per hundred feet. It is difficult to make exact statement concerning the proper size of main drains. In general they should be capable of removing one-fourth of an inch of water from the drainage area in twenty-four hours. Treatises on drainage give tables and formulae by which these relations may be calculated. An increase in the grade increases the rate of flow of water. Doubling the grade increases the carrying capacity of the drain about one-third. The following figures give some idea of the area of land drained by some common sizes of tile when laid at different grades:

NUMBER OF ACRES FROM WHICH 1/4 INCH OF WATER WILL BE REMOVED IN 24 HOURS BY OUTLET TILE DRAINS OF DIFFERENT DIAMETERS AND DIFFERENT LENGTHS WITH DIFFERENT GRADES.

Diameter of tile in inches	Grade in inches per 100 feet									
	1		2		3		6		9	
	Length of drain in feet									
	1,000	2,000	1,000	2,000	1,000	2,000	1,000	2,000	1,000	2,000
	Acres of land drained by different sizes of title									
5.........	19.1	15.7	22.1	19.4	25.1	22.7	32.0	30.3	37.7	36.3
6.........	29.9	24.8	34.8	30.5	39.6	35.9	30.5	47.8	59.4	57.3
7.........	44.1	36.4	31.1	44.8	58.0	52.8	74.0	70.1	87.1	84.1
8.........	61.4	50.7	71.2	62.6	80.9	73.6	103.3	98.0	121.4	117.3
9.........	82.2	68.1	95.3	83.8	108.4	89.6	138.1	131.3	162.6	157.1
10.........	106.7	88.5	123.9	108.9	140.6	128.1	179.2	170.5	211.1	204.4

ANGLE OF JUNCTIONS

Drains should join at an acute rather than a right angle. In other words the union of two lines of tile should have the Y rather than the T form to prevent the accumulation of sediment where the two streams of water come together. If the arrangement of the laterals is at a right angle to the main they may be curved in the last rod of their course. The union should be made at the center of the main so that the water from the lateral will have a slight drop. The grade of the last few feet of the lateral drain may need to be increased to secure this construction. It is a good plan to use junction tile which have the proper size of connection. For example, a 10-inch by 4-inch junction means a ten-inch tile which is cut to receive a four-inch lateral. If the junction is made by cutting the tile with a trowel by hand, the union should be well bedded in cement after first laying around the tile a single layer of paper to prevent the cement from running into the tile.

CONSTRUCTION OF TRENCHES

Short ditches may be dug by hand using spade, pick and shovel. The lack of adequate help often makes it difficult to get extensive drainage systems constructed in this way. The use of horse and machine powers reduces the difficulty of construction somewhat. If the land is very stony or full of roots, hard labor must be employed perhaps with the use of dynamite. On land that is not too stony the ditching plow drawn by one or more teams is very helpful. There are a number of plows on the market for this purpose that are very useful. Next in complexity is the large ditching plow equipped with wheels and drawn by several teams which tear up the soil and elevate it out of the ditch. There are two or three machines of this type such as the Cyclone, and the Bennett. Finally there is the large engine-driven ditching tractor of which the Buckeye is the best known type on New York farms.

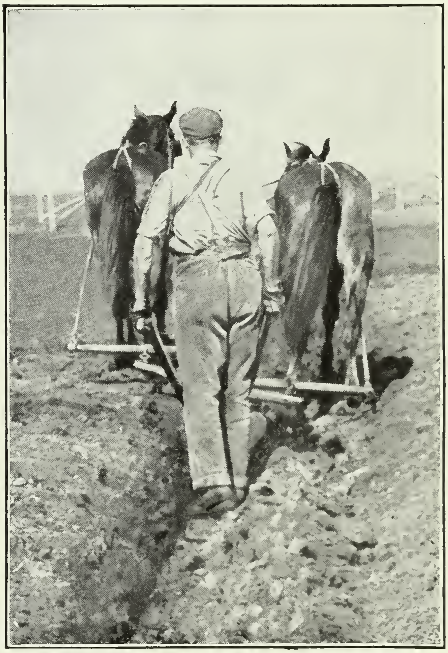

FIG. 112. OPENING A DITCH WITH A PLOW

The large plow is suitable for the individual farmer who has a considerable area to drain and has the horses for other purposes. The tractor ditcher costs so much that it is seldom a single farm is large enough to justify its purchase. It may be purchased jointly by a number of farmers who have drains to be constructed, or it may be purchased by one person and ditches dug by contract. Machines have been put into several communities for this purpose.

For tile drains the ditches are usually dug from twelve to fifteen inches wide according to depth, and with vertical sides to minimize the amount of earth moved. The bottom is finished with a compact surface and a small lateral curvature to afford a good base for the tile.

LAYING THE TILE

The tile are best laid by hand by a person in the ditch who should work backward and place each tile firmly in position, and if necessary wedge it a little with pebbles or earth to hold it in place. Where the ditch is deep and narrow a hook is sometimes used to place the tile.

BLINDING THE TILE

As soon as the tile are laid they should be lightly covered with earth which process is known as back filling or blinding. The sides of the ditch may be trimmed off with a sharp spade. This should be carefully done as should also the tramping to avoid pushing the tile out of line. As soon as the tile are covered three or four inches deep one may proceed to fill the ditch roughly with shovels, or with a team hitched to a plow by the use of a long evener, or by means of a horse and dump scraper. On long lines of ditch the filling is sometimes done with a road scraper.

ENTRANCE OF ROOTS INTO TILE

The tile is sometimes stopped by the development of roots which gain entrance through the joints. The depth at which the tile are laid has very little to do with this difficulty. It is determined by the presence of a perpetual flow of water in the tile from some spring. In dry periods this water seeps from the joints and moistens the soil, which condition attracts the roots. Protection of the upper half of the joint against the admission of silt is some aid to prevent the entrance of roots into the tile.

CONSTRUCTION OF OUTLETS

The construction of a drainage system should begin at the outlet and end there. There must be a sufficient grade to dispose of the water at the outlet. After the remainder of the system is constructed the outlet should be carefully protected, especially if the grade is small. This part of the system is especially in danger of being closed by tramping, caving of banks, freezing, growth of roots and other obstructive processes. If possible the water should have a free drop from the end of the tile. It is usually advisable to build up an abutment of concrete or stone with an apron upon which the water may fall without cutting out the bottom of the ditch.

In laying out the ditch as few outlets should be provided as practicable. Where several laterals might empty into an open ditch it is often better to drop back a couple of rods from the open ditch and put in a sub-main to receive all these laterals. This arrangement gives one instead of several outlets to be finished and cared for from year to year.

COST OF DRAINAGE

The cost of drainage varies greatly, depending upon the nature of the soil, the presence of stone and roots, the depth, size of tile, season when the work is done, the method of construction, and the local labor conditions. For three or four inch tile the cost of the finished ditch per rod in soil not particularly foul with stone and roots is from forty to sixty cents per rod. On a system of 2,560 rods constructed by hand where the size of tile ranged from three up to ten inches, the average cost per rod including all charges was sixty-eight cents. System aggregating 8,398 rods were constructed under the same management and on the same farm using a traction ditching machine, the size of tile ranging from three to thirteen inches, and the average cost was 63 cents per rod. Some of the work done with the machine was more difficult than any done by hand. The range in the cost of tile per rod was from 17.5 cents to 94.5 cents. The average cost of trenching with the machine was 17 cents per rod. The cost of drainage on this farm was from $29.74 to $43.80 per acre. The soil is a clay loam containing a few stones. A large part of the drains were arranged systematically.

Where a few lines of tile are laid in wet places the cost per acre will be less than where the drains are placed at regular intervals. The farmer would best begin by draining the wettest places having in mind that he may wish to extend the system.

RETURNS FROM DRAINAGE

The returns from drainage are large. As a matter of fact very little land is naturally well drained. Drainage will usually increase the yield of crops. The value of such increase depends on the nature of the crop. Some special crops such as flowers, ginseng and certain vegetables will quickly pay for a very frequent system of drains even as close as ten feet if the land is naturally wet. In mixed farming and fruit growing it is the observation of many practical farmers that the need for drainage is increasingly apparent under the usual system of cropping and that a moderate amount of drains well placed is about the best investment that can be made on the farm. Systems of drains in land which had been tilled but which was more or less wet have usually paid for themselves in four or five years and often in much less time.

The life of a well constructed tile drain should be measured by decades rather than by years.

LAWS RELATIVE TO DRAINAGE

It is frequently necessary for one to seek an outlet for drainage water across or upon a neighbor's land. The value of land drainage to the public is being more and more recognized and provision made for its installation. It is now possible for a person to oblige his neighbor to let him have a right of way to a suitable outlet for drainage water. The person benefited must of course pay the cost of construction to secure the outlet. In these cases where a large area of land embodied in several farms is involved cooperative action is essential.

There are two provisions of the law of New York for the drainage of wet land for agricultural purposes. The first of these is under the Agricultural Drainage Statute, Consolidated Laws of the State of New York, chapter 15, as amended by chapter 624 of the Laws of 1910.

The second provision is contained in the act establishing the State Conservation Commission, Consolidated Laws, chapter 65, article 8. The general procedure is the same under both acts and the cost of securing the right of way and constructing the drainage ditch is assessed against the land benefited. They usually deal with the large outlet canals but are applicable to secure an outlet for the drain from a single farm.

In a general way one may take advantage of the natural fall of the land in establishing an outlet for a drainage system and adjoining property owners must provide for the drainage water so discharged as surface water. As yet no such obligation is recognized to apply to water collected and discharged by tile drains except as it reaches the adjoining property as surface water in a natural drainage course.

There are very few cases of drainage which are not provided for in the existing drainage laws of the state.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

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Circular 71

Lime, Its Value and Importance

BY

JOHN H. BARRON

Farmers' Institute Lecturer

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LIME, ITS VALUE AND IMPORTANCE

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Within the past few years farmers have manifested great interest in the use of lime. It is well known that nearly all soils of New York State show benefit from its application. The exception to the rule is found in a narrow strip of limestone soil extending eastward some distance from Syracuse and westward to Lake Erie. But even here there are local areas where lime is needed. With this one exception, practically all the soils of the state are benefited by the use of lime, and generally the further south in the state one goes, the greater the need of it; the hill lands of southern New York being especially lacking in this element.

Lime is being used in increasing quantities and there is a growing interest in the practice of liming as a step in soil improvement; but experience continually shows that to get best results, lime must be applied systematically.

DIFFERENT FORMS

Since farmers are paying varying prices for the different forms of lime and are using the product in many ways, not always most wisely, it is advisable to devote a little time to the discussion of this phase of the subject. Because so much uncertainty exists it seems best to emphasize the difference between the various forms; to explain the factors involved in purchasing lime, so that an intelligent choice can be made among the numerous qualities of materials, offered as they are at varying prices; and to set forth the principles governing its rational use.

The supplying of lime for application to the land has developed into a profitable industry, and there are many different forms and grades on the market. Great claims are frequently made concerning the value of a particular grade. Lime products are frequently sold without a very definite guarantee as to quality and composition. All these facts tend to cause confusion in the mind of the purchaser.

The term "lime" is applied loosely to several products — calcium oxide, or burned or lump lime; calcium hydrate, or water-slaked lime; calcium carbonate, or ground limestone or marl; calcium sulphate, or gypsum or land plaster.

In the beginning of this discussion it is necessary to eliminate gypsum, since it does not have the power to correct acidity — a condition which lime, in general, is used to overcome — even though it may perform some of the other functions of lime. Also, it is almost universally held at a price which makes its use prohibitive.

Calcium carbonate is the natural source of all lime compounds used in soil improvement, and occurs in nature in great abundance in the form of limestone, shells and marl. If it is decided to use limestone, that which contains at least 90 per cent. of calcium carbonate should be insisted upon.

Quick or burned lime is the most concentrated of the common lime materials. It is produced generally by burning in a kiln a carbonate of lime, such as limestone. By this method the carbonate is divided into two compounds, carbon dioxide and quicklime. The carbon dioxide is driven off as a gas and makes up 44 per cent. of the carbonate of lime with which the operation began. In other words, in each hundred pounds of carbonate of lime, assuming it to be pure, there are 56 pounds of burned lime. Stated another way, nearly two tons of limestone must be employed to make one ton of burned lime.

When burned lime and water enter into combination hydrated or water-slaked lime is produced. Commercially prepared it occurs as a fine, white, dry powder, and is easy to apply to the soil. In the process of slaking, 56 pounds of fresh burned lime are increased to 74 pounds of hydrated lime by the addition of 18 pounds of water. Or, a ton of hydrated lime contains 486 pounds of water and 1,514 pounds of actual lime.

Many of the hydrated limes on the market contain considerable quantities of carbonate of lime, and aside from their physical condition are but little better than ground limestone. Generally hydrated limes are held at prices much higher than their actual value would warrant.

The slaking of lime with water is accompanied by the evolution of considerable heat. Therefore, the dust which arises from burned lime when it is handled, coming in contact with perspiring men and animals, causes discomfort and sometimes quite serious burning. Hydrated lime is less caustic than burned lime and therefore less disagreeable to handle.

Burned lime and slaked lime, by the absorption of carbon dioxide from the air and soil, eventually form carbonate of lime, the same compound from which they were made by the burning process. The beneficial effects of lime on soil are thus due in the main to carbonate of lime, regardless of the form in which the lime was applied to the land. The application to the soil of fresh burned lime, after slaking has taken place, has an advantage, perhaps, in that intimate contact between the lime and soil is obtained because of the fineness of the lime material secured by the slaking process.

Air-slaked lime is formed by exposing burned lime or slaked lime to the air, and is a mixture of hydrate and carbonate of lime, the proportion of the two depending upon the time the lime has been exposed, and upon the surrounding conditions. Burned lime exposed to the air first absorbs water and then carbon dioxide. If the process is carried to the finish the result will be calcium carbonate or air-slaked lime, in a finely divided condition.

On the market one frequently finds for sale so-called "agricultural lime." This term is indefinite, since various products are sold under this title — sometimes a mixture of carbonate and hydrate; then again, refuse lime, or incompletely burned limestone, unfit for masonry purposes, ground and mixed with lime which has partially slaked. The only guarantee of the value of this material is an analysis showing its actual lime content.

Many by-product limes are of value for agricultural purposes. They generally consist of a mixture of hydrate and carbonate of lime or else are largely carbonate. All such materials are valuable just in proportion to the amount of lime they carry. Among such are waste lime from the manufacture of soda ash, carbonate of lime from soap factories, lime from acetylene generators, waste lime from sugar beet factories and tanneries and lime from gas purifiers. Waste-gas limes should be used only after exposure to the weather for a considerable time.

Oyster shells contain about 95 per cent. carbonate of lime and if finely ground are as good as limestone for the soil.

Wood ashes, often valued chiefly for their content of potash and phosphoric acid, contain about 30 per cent. carbonate of lime, which is equal in value to an equivalent amount of calcium carbonate in limestone.

Marl is a loose deposit, mostly of small shells mingled with clay. It varies greatly in composition and should be purchased only on the basis of carbonate of lime present as determined by analysis. Limestone and marl, carrying equal amounts of calcium carbonate, are of equal value in soil improvement.

Another material quite rich in lime is basic slag, commonly known as Thomas slag. In commerce it is valued chiefly for its content of phosphoric acid, which is about 16 per cent. It contains free lime, has an alkaline reaction and is an efficient carrier of phosphorus on some soils. It would not be economical to use it to overcome acidity, since lime as such is much cheaper, but it has a place in soil improvement.

The advisability of using fresh burned lime, slaked lime, carbonate of lime or any of the by-products, depends upon many factors. The chief factor is the cost of a given quantity of calcium oxide, since lime is purchased and applied chiefly for its power of correcting acidity. The value of the various forms, if considered from this point of view alone, must be comparable to the amounts of calcium oxide or actual lime they contain.

Bearing in mind the relationship previously brought out, it is evident that the price of limestone per ton should be less than that of quicklime, and the price per ton of slaked lime less than of quicklime, but greater than that of limestone. Stated exactly, 56 pounds of quicklime, 74 pounds of slaked lime and 100 pounds of ground limestone or marl should be purchased at approximately the same prices, assuming equal purity, and thus purchased are equally good bargains; acid correcting power alone being considered.

EXPENSE OF LIMING

In much of southern New York (the writer cannot give the figures for other sections of the state) $4 per ton is the average price for fresh burned lump lime delivered in car lots at the railroad station. On this basis, limestone and marl should cost $2.24 per ton and slaked lime $2.96 per ton. On the contrary, farmers frequently pay $4 to $6 per ton for limestone and marl, and $7 to $9 per ton for slaked lime. It is fair to say that one can reasonably pay perhaps a dollar more per ton for limestone, marl and hydrated lime than their indicated value when compared to fresh burned lime, because the former materials are much more easily handled.

In estimating the cost of liming land, the cost of the material, the handling and the application must be considered. Assuming that an application of one ton of burned lime per acre is correct, how does its cost compare with that of the other materials?

One ton of burned lime at railroad station	$4 00
Hauling	1 00
Cost of applying	2 50
Total cost per acre	$7 50

The cost of applying is high on account of the fact that burned lump lime must be slaked before it is applied to the soil, and this involves extra handling. It is also quite difficult to apply.

The following figures tell the story in regard to hydrated lime:

2,640 pounds of hydrated lime (equivalent to one ton of burned lime) at $7.00 per ton	$9 24
Hauling at $1.00	1 32
Applying at $.75 per ton	99
Total cost per acre	$11 55

The difference between $11.55 and $7.50 is due to a high first cost in the case of hydrated lime and the expense involved in paying for and hauling 640 pounds of water combined with the burned lime, notwithstanding the fact that the cost of application is smaller. It is true that the convenience of handling and storing hydrated lime may in a measure affect its increased cost over the burned.

In the case of ground limestone and marl the following conditions exist:

3,570 pounds of limestone (equivalent to one ton of burned lime) at $4.00 per ton	$7 14
Hauling, at $1.00 per ton	1 78
Applying, at $.75 per ton	1 33
Total cost per acre	$10 25

The above computations are approximately correct for New York State conditions. Ground limestone can be hauled with less discomfort than the other forms, and if the cost per acre of such were not much greater than that of caustic lime it would be satisfactory. High freight rates are often a contributing factor. The greatest difficulty seems to be that producers in New York State generally charge too high a price for the material at the quarries. In New York ground limestone costs generally — though a few producers should be excepted — $2 or more a ton, f. o. b. cars at quarries; whereas in Ohio and Pennsylvania it is usually put on the cars for $1 to $1.50 per ton.

CONDITION OF MATERIAL

Often our farmers do not get the results they expect from limestone. This, in a measure, is due to the fact that too small applications are made, induced no doubt by the relatively high cost of the material. If one ton of burned lime or its equivalent in slaked lime or ground limestone is used, there is generally little difference in the results.

As a general proposition it may be said that a good course to pursue is to purchase that form of lime which gives the greatest amount of calcium oxide for the money involved, providing the mechanical condition is satisfactory.

Limestone can be made very fine by burning and then grinding the burned lime. This product, known as ground burned lime, is satisfactory, and if sold at a reasonable price should be used in increasing quantities with good results.

Fineness of materials is important in liming land. If there is an advantage here it is secured by the use of burned lime which, in the process of slaking, is broken into much finer particles than are produced by grinding limestone. It often happens that small applications of burned lime, after slaking, give good returns; whereas an equivalent amount of ground stone shows no effect. Such differences are not so noticeable when a ton or more of burned lime or its equivalent in limestone are used per acre. In the case of the small amounts of material it is a matter of fineness of division. The more finely divided material is when applied to the soil, the more quickly it is taken into solution and disseminated through the soil mass. For immediate results fine material has a great advantage. Limestone, the major portion of which passes a sixty-mesh sieve, has given good results.

Purity of material is also a point to be considered. Some marls are only 50 per cent. pure carbonate of lime. Ground limestones on the market run from 80 to 95 per cent. pure carbonate. Other forms of lime show as great variations. The impurities in general do no particular harm; they are merely dilutents. There is no objection to using a low-grade material so long as the price is right and reduced in proportion to the impurities present. Buyers of lime can protect themselves only by always insisting upon creditable guarantees of quality.

The character of soil determines to some extent what kind of lime to purchase. Many soils need improvement physically. More of the plant food in them should be made available as well as acidity corrected. Burned lime is best under these conditions. Carbonate of lime corrects acidity but does not have much effect upon physical conditions.

QUANTITY PER ACRE AND MODE OF APPLICATION

From the evidence, it appears that as a rule burned lime has more to commend its use than the other forms. Its cost of application is less; it breaks up very fine, giving intimate contact with the soil — hence immediate results; and in addition to correcting acidity it has an important physical action on compact, hard soils, rendering them more open, porous and friable.

It is generally best to purchase that form of lime which gives the greatest amount of calcium for a dollar, be it quicklime, hydrated lime or limestone. Quicklime must first be slaked by placing it in piles in the field as it is unloaded from the car. After it slakes it can be spread from a wagon or with a manure spreader. Hydrated lime and ground limestone are evenly distributed with a lime or fertilizer spreader. The fertilizer attachment to the modern grain drill is also satisfactory, provided it is so constructed that it has sufficient capacity.

In New York State 1,000 to 2,000 pounds of quicklime or its equivalent will give good results on general farms where a rotation with clover is grown. In such cases the above amount may be used once every rotation period, preferably applied to the grain crop with which the clover is seeded. For alfalfa, usually even twice as much is needed as previously mentioned. If lime is used in a rotation with potatoes let it be applied to the crop of seeding which follows the potato crop. On farms where rotations are not followed, a general suggestion is, use lime at intervals of four to eight years. On farms where definite rotations are followed it may be used once in every rotation period when seeding to clover. In all cases it should be used at least often enough to insure good clover.

It makes but little difference when lime is applied except that it should be put on the soil after, rather than before plowing, so it will not be buried too deeply. The harrowing of the land in preparation for the coming crop will aid in securing a good distribution of it. If possible, liming should be done in a slack season, and by all means should be hauled when the roads are good.

LIME NECESSARY FOR CLOVER

It is a matter of experience that where clover is failing, applications of lime prove very beneficial. Most farmers realize that clover growing is at the bottom of success in nearly all systems of farming. Because of this and because in the past few years so much has been said about the use of lime, there is some likelihood that too much importance may be attached to its use, and soils be neglected in other regards. Such mistakes should be guarded against. There should be no misunderstanding regarding the fact that lime can in no sense take the place of other plant foods, of tillage, of drainage, of humus, or of any other factor of soil fertility. For this reason the terms " fertilizer lime " and " lime fertilizer " are misnomers. Lime does not take the place of fertilizers, animal or chemical.

When a soil by its chemical reaction shows acidity, or when this condition is indicated by the failure of leguminous crops,— especially red clover, where they formerly grew well,— the best result can not be obtained unless lime is used as a soil amendment along with chemical and animal manures. Lime materials can furnish only lime. They can not make up for any deficiency in nitrogen, phosphoric acid or potash.

FUNCTIONS OF LIME

The fact that lime is necessary to correct acidity has already been dwelt upon; but this is not its sole function. It promotes the availability of phosphorus and potash, and is one of the essential elements of plant food. It tends to make clay soils more porous and sandy soils more compact.

Acid compounds are constantly being formed in soils by the decay of organic matter, by the application of some fertilizer, and in divers other ways. So long as there is enough lime in the soil for such compounds to unite with, the soil is not acid and such acid compounds do no damage to crops. In New York State many soils are acid, and the time is coming soon when the available lime in many others will be used. The acid conditions manifest themselves by the appearance of acid loving plants, such as sorrell, paint brush, moss, etc. Yearly, new fields show red with sorrell in May and June, an almost infallable sign of lack of lime and of increasing difficulty in the growing of leguminous crops.

Lime is of prime importance in the maintenance of the supply of soil nitrogen. This is a very practical problem. Nitrogenous fertilizers are very expensive. Lime in the soil enables the farmer, however, to use a greater degree than is otherwise possible, the inexhaustible supply of nitrogen in the atmosphere in crop production. Leguminous plants — such as clover and alfalfa — gather nitrogen from the air through the bacteria in the nodules on their roots, and the keeping up of the supply of soil nitrogen is largely dependent upon this action. These bacteria, and consequently the nodules, do not develop in acid soils. Hence, through the failure of the legume (other classes of plants do not possess this function) no nitrogen is added to the soil. In fact the supply is being diminished in many soils. Organic matter containing nitrogen, such as stable manure and clover sod, must go through a certain kind of decomposition before the nitrogen so contained becomes of use to plants as food. In the absence of sufficient lime to overcome all acids in the soil as fast as they are formed, this process is interfered with and the nitrogen in the stable manure or other organic fertilizer may be wasted instead of being made into plant food. Between these two difficulties, the failure of legumes and the unfavorable fermentation in acid soils, it is indeed hard to keep up the nitrogen supply in some lands.

The most beneficial effect of lime is promotion of the growth of leguminous plants. This results in building up the nitrogen supply and the general fertility of the soil. It is to be noted that this soil improvement is accomplished principally through leguminous crops, and if rotations are not so planned as to advantageously include them, the end and aim of liming — soil improvement — is defeated. The blind application of lime is of very little use.

The beneficial effects of lime usually do not appear at once, except on legumes. The latter grow better almost immediately,— if the soil needs lime — develop more nodules and gather more nitrogen. The benefit to other crops evidently cannot begin to show until at least one leguminous crop has followed the application of lime, and been plowed under, either in its entirety or the stubble and roots. In all cases, according to the Indiana Experiment Station, " the promotion of the growth of legumes is the one effect which above all others justifies the use of lime."

CARE IN ITS USE

It is to be emphasized that no form of lime should be mixed or used directly with stable manure, notwithstanding the claim of many manufacturers of limestone. Neither should lime materials be combined with acid phosphate nor with fertilizers containing it. Materials containing organic nitrogen, such as dried blood and tankage, should not be mixed with lime materials. Manures and such fertilizers should be used with different crops from those to which lime is applied, or else they may be used with lime after sufficient time has been allowed for the latter to become thoroughly incorporated with the soil.

In this discussion much has been said about the benefits of lime. However, there may be some danger in its use. It may cause too much plant food to become available, as well as the leaching of nitrogen and the too rapid decay of organic matter. Hence it is necessary to emphasize its use in medium quantities at intervals of five or six years as previously indicated. Also, it must be used in a cropping scheme which is so planned that the organic matter of the soil is maintained.

The production of large crops by any method except direct addition of plant food — be it by superior tillage, drainage or the use of lime — is an exhaustive process so far as the soil is concerned, and necessitates the use of more manure, the growing of more clover and the use of more fertilizers in order to maintain the soil balance. Farmers who use lime must take cognizance of these facts or lime may make their farms poorer after a few years, instead of better. Used judiciously, lime is a benefit; used injudiciously it is a detriment. It is not a fertilizer. Dependence upon lime alone will result in ultimate failure. In the failure to recognize these principles lies the truth of the sayings, " lime and lime without manure makes both farm and farmer poor," and " lime makes a rich father but a poor son."

It must be borne in mind that the good effects and the bad effects of liming are operative at the same time. The question as to which shall dominate is a question of soil management. The use of rather small quantities of burned lime, or the use of the milder forms of lime in increased quantities in proper crop rotations, in connection with manure and plenty of leguminous crops, will cause constructive work. The use of large quantities of lime without the use of manure and leguminous crops, and without the consequent attention to the conservation of soil humus, will cause destruction of crop producing power.

Limestone soils are renowned for their fertility, and have been known to retain their productivity for generations. In the light of this it must appear rather absurd that any ordinary application of lime will injure any soil. The real trouble in many cases where lime has been said to cause injury is the lack of nitrogen and organic matter. This is often the case where as yet but little liming has been done. These conditions are due to poor rotations — in the majority of cases to none at all — and to a very common disregard for the proper method of the preservation and use of stable manure. The poor conditions have come about independently of the use of lime. The above statement is made to show that many of the unfavorable results attributed to the use of lime are in reality due to poor methods of farm management. Sometimes the use of lime is a convenient scapegoat, an excuse for poor results, just as fertilizers are at times unjustly condemned and with no more reason.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

UNIVERSITY OF ILLINOIS

AUG 21 1915

Circular 72

The Value and Use of Farmyard Manure

BY

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Director, New Jersey Experiment Stations, New Brunswick, N. J.

Reprint from Bulletin 50

THE VALUE AND USE OF FARMYARD MANURE

Dr. Jacob G. Lipman
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Farmyard manure differs from commercial fertilizers in that it contains, apart from plant food, two constituents, the value of which it is difficult to gage. So far as the plant food itself is concerned, we may compare it with equivalent materials in commercial fertilizers. We know that a pound of nitrogen in nitrate of soda or a pound of phosphoric acid in acid phosphate has a definite value. What then is the value of these substances in farmyard manure? Is a pound of nitrogen in the latter worth as much as a pound of nitrogen in nitrate of soda? Fortunately for us we possess data that permits us to give a fairly accurate answer to these questions.

Numerous experiments in this country and abroad have conclusively demonstrated that a pound of nitrogen in farmyard manure is not worth as much as a pound of nitrogen in a pound of nitrate of soda. They have demonstrated that under average conditions as to climate, soil and crop, the increase from manure nitrogen is only about half that from an equivalent quantity of nitrate nitrogen. In other words the nitrogen in animal manures is worth only half as much or less than nitrate nitrogen. If we can buy the latter at eighteen cents per pound, the nitrogen in manure should not be allowed a value greater than eight or nine cents per pound.

Similarly, we have reason to conclude from facts in our possession that the phosphoric acid in manure may be allowed a value of three cents per pound and the potash about the same value per pound.

Now, taking for the sake of illustration, horse manure as containing 0.5 per cent. of nitrogen, 0.4 per cent. of phosphoric acid, and 0.45 per cent. of potash, we find respectively ten, eight and nine pounds per ton of these constituents. Hence the nitrogen at nine cents per pound would be worth ninety cents; the phosphoric acid at three cents per pound, twenty-four cents; and the potash at three cents per pound, twenty-seven cents. Giving us a total value per ton of one dollar and forty cents in round numbers. This is a fairly generous allowance for plant food contained in the average sample of horse manure, and if we were to buy it for the plant-food alone, we could afford to pay no more. Calculated in the same manner the average sample of cow manure has a value not greater than one dollar or one dollar and ten cents per ton. However, animal manures contain something aside from their nitrogen, phosphoric acid and potash, that may render them important or even indispensable for certain soils and for certain crops. The average sample of horse manure contains four hundred and fifty or five hundred pounds of organic matter per ton and it contains in addition countless numbers of bacteria. It is not a simple matter to place a definite value on these two constituents of manure. For some soils and crops they may be worth nothing. Occasionally they may be a hindrance rather than a benefit. For other soils and crops they may prove of incalculable advantage. Soils poor in humus and limited in their power to retain the rain which falls upon them would most readily respond to additions of these constituents. Heavy soils well provided with humus and plant food might derive but slight advantage from the humus making material and bacteria supplied in manure. Yet, generally speaking, it would be unwise to make an allowance for these materials. We should not really include them in our valuation of the plant food, and should not pay more than one dollar and fifty cents per ton for horse manure, and one or one quarter dollars for cow manure. Beyond that we should be paying for something which would give us very uncertain returns. If a greater valuation is to be placed at all on animal manure, it may be made in connection with run down soils largely depleted of their available plant food and of their humus. In the restoration of all such soils the humus forming material and the bacteria present in the manure may produce effects that green manures and commercial fertilizers would produce but slowly.

The valuation placed on farmyard manure by the trucker and gardener is naturally greater than that placed on it by the general farmer. The market gardener, especially, finds it necessary to locate himself near the city. He must often use land not naturally adapted for the growing of large and early crops of vegetables. By the use of enormous quantities of manure he attempts to transform soil that is naturally compact and cold, into a warm, mellow loam. Moreover, the value of his land is often so great that he cannot afford to grow but one crop in a season. He must grow two or even three crops in one growing season, and has not the opportunity to utilize green manures for restoring the vegetable matter that is constantly decomposing and disappearing from his fields. For him there is no other suitable source of organic matter. He applies not infrequently as many as forty or even fifty tons of horse manure per acre in a single year, at a cost startlingly great to the general farmer, but not excessive to him whose crops may have a retail value of three or four hundred dollars per acre.

But while manure is worth much less for the general farmer than it is for the trucker, it has even for him a value that is quite considerable. It is estimated that the average dairy cow will produce ten tons of manure in a single year. The average horse or mule will produce five tons in one year. Hence it is evident that on many farms there is produced one hundred, two hundred, three hundred, or even five hundred tons of manure per annum. This waste material may range in value from a few dollars where only two or three animals are kept, to many hundreds of dollars where large herds of cattle are kept. In its aggregate, the value of the manure produced on the farms of the United States runs into hundreds of millions. From the standpoint of national economy we are dealing, therefore, with a commodity of great signficance to the agricultural and likewise to the urban communities.

We come thus to the very important question of the conservation of the plant food contained in animal manures. We are no longer strangers to the fact that improperly stored manure may lose as much as one-half of its total plant-food value. When kept in the open it loses a large portion of its valuable nitrogen compounds by leaching. It loses still another portion, thanks to the fermentation processes, in the manure heap, and the resulting escape of much ammonia and nitrogen gas. A simple calculation will show that a lot of manure containing,—let us say one hundred tons,—may lose as much as one thousand pounds of nitrogen and four or five hundred pounds of potash. And because these represent the most readily available portion of the nitrogen and potash in the manure, their worth is proportionately much greater than that left in the manure heap. But even at ten cents a pound this nitrogen is worth one hundred dollars and the potash at three cents a pound is worth twelve or fifteen dollars.

Surely the average general farmer cannot afford to throw away annually a sum of money that would more than pay his taxes. More than that, the direct losses just noted are accompanied by indirect losses that may be even more disastrous. Investigations conducted at our experiment stations confirm the observations of intelligent farmers in that they show the value of manure in assuring a catch of clover or other legumes on acid soils. It has been demonstrated time and again that fields generously dressed with farmyard manure will grow clover and alfalfa in spite of the lack of lime; whereas on the same soil these crops would fail except where lime is used. And it may not be amiss to point out again that manure properly treated and cared for will not merely produce a larger crop, but will provide for a better sod and for better stubble; for plants that are deeper-rooted, and for a soil better supplied with humus. He who would serve the cause of agriculture could well spend his time in teaching the doctrine of conservation. He should tell his neighbors that manure kept under cover, and kept moist and well compacted, would lose but little of its fertility. He should teach them that in all but the lightest of soils the manure should be spread and plowed under with little delay whenever it is practicable to do so. Let us remember that manure is essentially a nitrogenous fertilizer, and that much of its nitrogen is just as available as that contained in tankage, dried blood or ground fish. Can the farmer afford to throw away a hundred or a thousand pounds of manure nitrogen, and then attempt to replace it by commercial fertilizer whose nitrogen may cost him twenty or twenty-five cents a pound? Surely in this day of wider knowledge and of better farming we should refrain from wasting our substance.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

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Circular 73

Commercial Fertilizers

BY

D. P. WITTER

Farmers' Institute Conductor

Reprint from Bulletin 50

COMMERCIAL FERTILIZERS

D. P. Witter
Farmers' Institute Conductor

The term "commercial fertilizer" as used in this article applies only to those elements of plant food sold in the market. It may mean a direct plant food or an amendment which is only indirectly beneficial to plants. Fertilizers in the form of manures will not be considered.

Only in exceptional cases can a permanent and successful agriculture be maintained by the use of commercial fertilizers alone. From the standpoint of a broad, national policy the fertility of the land must be perpetuated through cultivation and the use of the natural forces of soil and air.

The general farmer would have but little use for commercial fertilizers if he would give the land sufficient cultivation; would practice a short rotation and the growing of clovers and other leguminous plants; would keep the supply of organic matter in the soil up to the per cent. found in it when taken from the hand of nature and would provide drainage for wet lands. These methods practiced, he could grow maximum crops without the purchase of plant food.

We find most of our farm lands far from being in the condition above mentioned. The organic matter has been generally depleted, drainage is badly needed on a majority of our lands, and as a result they have become sour; and the latent plant food is not made available as fast as is needed for profitable crop production. To relieve this bad condition farmers have resorted to commercial fertilizers, to a considerable extent, for their supply of plant food.

The wise farmer will consider himself only as a steward. He will recognize the fact that he has no right to so handle his land that future generations cannot long survive, and he will adopt a system of farm management which will maintain the fertility of the soil on a basis which will endure for all time. To accomplish this, these five things are required, drainage of all wet lands, deep and thorough cultivation, a sufficient supply of organic matter in

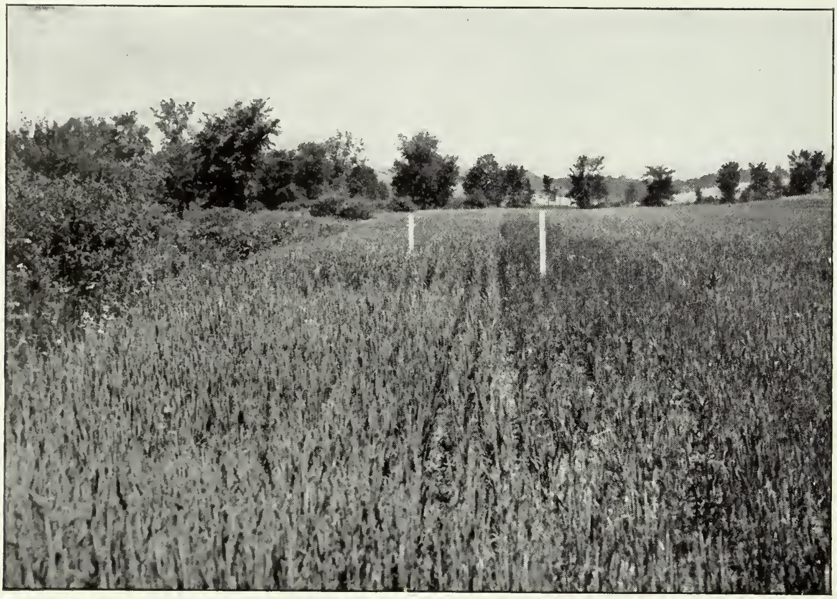

FIG. 113. OATS SHOWING RESULT OF USE OF FERTILIZER.

Photograph taken July 3, 1913, just as oats were beginning to head. Where 200 pounds of commercial fertilizer (2–10–6) was used an acre, the oats were high and thick; where no fertilizer was used oats were poor and short

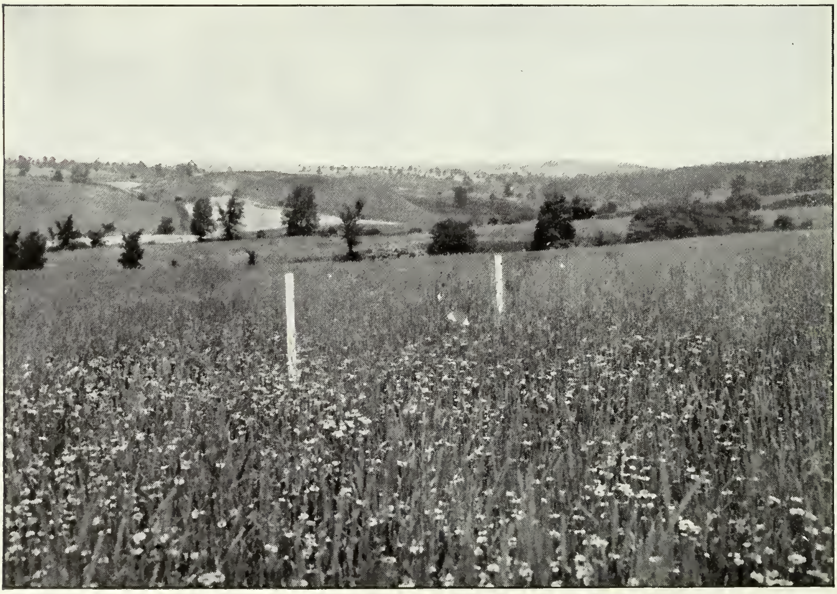

FIG. 114. TIMOTHY AND CLOVER MEADOW, SHOWING RESULT OF USE OF NITRATE OF SODA.

One hundred pounds of nitrate of soda an acre was used about May first. Where nitrate was used grass was high and thick; where it was not used grass was thin and full of daisies the soil, a short rotation and the growing of some leguminous plants.

At the present rate of usage, which will probably be continued for many years, the world's supply of chemicals from which nearly all of the commercial fertilizers are manufactured, cannot always last. Let us hope that the supply will not fail before farmers have learned the true method of maintaining the fertility of the land.

Commercial fertilizers, at present, if intelligently used will generally bring a good profit.

Of the ten or more elements required for plant growth, comparatively only a few years ago but three of them (nitrogen, phosphoric acid and potash) were considered deficient in available form to grow maximum crops. Under present conditions the use of lime has proven that in many soils it is the controlling factor for plant growth.

It would be difficult to give the exact function of the different elements of plant food, each is so interwoven with the other, but generally considered they are as follows:

Nitrogen. Promotes growth and green leafage. Where only stalks and leaves are desired, as in the case of lettuce, celery, or grass that is not to bear seed, even a limited excess of available nitrogen will do no harm, unless lodging of the plant follows. An excess of nitrogen in comparison with the phosphoric acid and potash, retards and lessens flower and fruitage.

Phosphoric Acid. Promotes quick germination of seeds, enlarges root growth, hastens development, and increases the amount and weight of seeds. In other words, it has a decidedly beneficial effect upon the reproductive part of the plant.

Potash. The action and effect of potash on the plant is not so well understood as is that of some other elements, but its favorable influence on the formation of starch and other carbohydrates, and its effect in giving strength to straw and stalk, are well recognized.

Lime. Generally considered an amendment, is, in part, a plant food. It acts upon the soil and makes available other mineral elements; it corrects acidity where there is free acid, and it promotes bacterial action which hastens the decay of organic matter. It may also have a beneficial effect upon the physical condition of some soils, especially clay.

In the manufacture of commercial fertilizers the chief supply of nitrogen is from the nitrate beds of South America; the phosphoric acid is largely secured from the phosphate rock found mainly in Tennessee and the Carolinas, and the potash comes from the potash mines of Germany.

An analysis of thirty-four soils in this state shows an average in the first foot acre of 4,826 pounds of nitrogen, 5,904 pounds of phosphoric acid and 26,386 pounds of potash. This average of the mineral elements is maintained in each succeeding foot. Could all these elements be made available as the plant required, to grow 20 bushels of wheat an acre there would be nitrogen sufficient to last 138 years, phosphoric acid 295 years and potash 753 years. The fact that only a portion of this plant food is annually set free, and that it is beyond one's power to determine just how much or how little will go into solution during the growing season, the exact amount of nitrogen, phosphoric acid and potash to apply to the land to grow a given amount of any crop cannot be definitely fixed.

Many manufacturers are placing on the market special brands of fertilizers under the titles of "Potato Fertilizer" "Corn Fertilizer" and fertilizers for other crops. It is to be expected that such fertilizers will be used on many kinds of soils and under greatly varying conditions, and that the results derived from the indiscriminate use of such mixtures must often prove a loss to the buyer.

For many years scientific men and institute lecturers have urged farmers when buying commercial fertilizers to purchase them as they would flour or sugar; that is, to buy only the elements which, after most carefully selected information and experiment, their land seemed to require.

Until very recent years but little progress has been made along this line and farmers generally continued the buying of ready mixed fertilizers. Now many are purchasing the chemicals and either applying them separately or are practicing home mixing.

Perhaps one reason why home mixing of commercial fertilizers is not more generally practiced is because farmers have not known exactly how much of any element to use to produce the desired percentage. An example to illustrate how this is determined is given below:

At the time of sowing alfalfa recently, I used on an acre, 100 pounds of nitrate of soda, 500 pounds of acid phosphate and 50 pounds of potash. The percentage of the above mixture would be be—

	Per cent.
Nitrogen	2.30
Phosphoric acid	10.77
Potash	3.84

The problem is solved as follows:

	Pounds	Per cent.	Pounds
Nitrate of soda	100	15	15
Phosphoric acid	500	14	70
Potash	50	50	25
Total	650		

We have here a mixture of 650 pounds of material containing 15 pounds of nitrogen, 70 pounds of phosphoric acid and 25 pounds of potash. Divide the amount of each element by the total amount of the mixture and we have the per cent. of each.

	Pounds		Pounds of material		Per cent.
Nitrogen	15	divided by	650	equals	2.30
Phosphoric acid	70	divided by	650	equals	10.77
Potash	25	divided by	650	equals	3.84

By this simple process the percentage of each element in any mixture may be found provided the analysis of the materials is given.

When ready mixed fertilizers are used the farmer will, as a rule, get more for his dollar if he purchases high-grade, readily available materials and uses less an acre, than if he buys the low-grade goods and uses relatively more. Much of the nitrogen in low-grade fertilizers is from sources which renders it very slowly available, also each ton contains more filler or worthless material, than does the high-grade goods. The price paid does not determine whether a fertilizer is high or low-grade. Phosphoric acid in the form of 14 per cent. acid phosphate, which can be purchased for $12 to $14 a ton, is a high-grade fertilizer if it is all the soil needs for the growing of the crop.

My observation and experience lead me to believe that, where lime or acid phosphate are used in fairly liberal quantities, for most of the soils in New York State — especially the clay soils —the purchase of more than a small amount of potash is not economical, and in many cases no return is given for the expenditure.

Where animal husbandry is practiced and the manures are well preserved and applied, the farmer should look to the farm manures and to leguminous plants for his supply of nitrogen, which is the most expensive part of plant food. The potash, which is found in the land in very liberal quantities, is made available by the rotting organic matter and by the use of lime and acid phosphate; so, by the use of the two last named, both of which are produced in this country and are comparatively cheap, one may usually supply all the available plant food necessary to grow maximum crops on average soils. Where animal husbandry is not practiced the purchase of nitrogen seems more necessary.

The amount of commercial fertilizer which will prove most profitable will depend, to some extent, upon the crop to be grown. For example, if 200 bushels of potatoes are grown on an acre of land at fifty cents a bushel we have an income of $100, but if 50 bushels of oats were grown on the acre at fifty cents a bushel, and allowing one ton of straw at $10, we have an income of only $35, which is less than one half the amount received when potatoes were grown. One can readily see that the farmer can, other things being equal, well afford to use a much larger amount of commercial fertilizer on potatoes than would be profitable on oats.

It is important for spring planted crops that only fertilizers which contain readily available materials be used. To be of the greatest benefit the commercial fertilizer should be made from materials such as nitrate of soda, acid phosphate, and muriate or sulphate of potash, each of which goes quickly into solution in the soil waters, and give the plant a quick start. Later in the season, after the soil has become warm and the decaying organic matter has made latent plant food in the soil available, the plant will derive its growth from that source. When the crop is a special one, or when the plant food must be purchased for the entire season, the use of dried blood, cotton-seed meal or other like materials, which must decay before the plant food becomes available, may be most economical as a partial source of nitrogen.

As a rule nitrate of soda should be used only on plants just starting to grow or those not making sufficient growth. Generally it will not pay to use it on a leguminous plant that is well established and has the nodules on the roots, but, when *starting* such plants as alfalfa, or upon timothy meadows where the root is good but a lack of nitrogen is apparent, an application of 100 pounds an acre will often give an increase in the crop of from 1,000 to 2,000 pounds of hay.

Phosphoric acid and potash are best applied *in* and not *on* the soil as they become fixed very near where they are left. Lime and the nitrates work down into the soil and may be applied on top or near the surface of the ground.

For the profitable growing of all kinds of leguminous plants the use of lime has become necessary on nearly all soils, especially those in southern New York.

The use of salt on the land is practiced by some farmers, although on many crops its benefit is very doubtful. The results obtained from its use could, in many cases, be more economically obtained by lime or other substances. Often its application is clearly detrimental. Five hundred pounds an acre should be the maximum used.

Whenever a farmer applies any such material he should always leave a check and carefully note results. In this way he can determine for himself whether or not it was a profitable investment.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

AUG 21 1915

Circular 74

Potato Growing

BY

GEORGE H. HYDE

Farmers' Institute Lecturer

Reprint from Bulletin 50

POTATO GROWING

George H. Hyde

Farmers' Institute Lecturer

Four leading factors essential to a successful potato crop are: Good seed, soil adapted to potato raising, thorough cultivation and generous spraying.

We will take up this most important subject to the farmers of the State of New York under the above headings.

SEED SELECTION AND TREATMENT

I will not discuss pedigreed potato seed, although I believe it is essential to the best success in potato growing. Few farmers are so situated that they can give the time necessary to carry on a thorough system of breeding. I would advise farmers, where possible, to obtain such seed even at what may seem an exorbitant price. All potato growers can improve their seed by careful selection of sound, mature, medium-sized tubers. In cutting seed my practice has been to quarter the potato, being careful to have at least two thrifty eyes in each quarter. If there is any indication of scab, treat the seed with formalin dip. That of United States standard of purity (40 per cent.) may be obtained at almost any drug store. One pint is added to a barrel containing thirty gallons of water. The tubers in sacks, cut or uncut, are immersed in this solution for two hours when they are removed and are then ready to plant or cut.

PREPARATION OF SOIL AND FERTILIZERS

The ideal soil for potatoes is a clay loam with a clover sod, but we do not all have that. Very often a timothy sod which has been well exhausted of its humus is used. Under these conditions I advise plowing under twelve to fifteen loads of average barn manure to the acre, plowing not *less* than six inches deep, immediately following the plow with roller and then harrow; this treatment conserves moisture. After thoroughly fitting the soil — and that means making as fine a seed bed as possible — we are ready for planting. I have been asked how many times one should harrow. I can not answer definitely, since under some conditions it requires many more times than under more favorable conditions. As the potato is a quick grower it must have plenty of available fertility. Four or five hundred pounds of 10-5 acid phosphate and muriate of potash should be thoroughly worked into the soil, and at planting time a 2-10 fertilizer is put into the rows. As our market calls for a medium, rather than a large potato, close planting is preferable, 12 to 14 inches in the row, and rows 3 feet apart. Begin cultivation before the potatoes are out of the ground and continue it as long as it is possible without too much damage to the foliage.

SPRAYING

Spraying should be done often and thorough. Begin as soon as the beetles begin to hatch, and continue it once a week, until the vines begin to die, using a 6-6-50 formula of bordeau mixture. To control the bugs I add two pounds of paris green to the mixture, first making a paste of it and putting in the sprayer when about three quarters full. Never put the paris green in the sprayer dry. I want to impress upon all potato growers the value of spraying; I have proved it many times.

This subject which we have gone over hastily is of much more importance to New York State farmers than many seem to realize as potato growing is one of the best paying propositions.

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AUG 21 1915

Circular 75

Specifications for Successful Fruit Growing

BY

PROFESSOR U. P. HEDRICK

Horticulturist, New York Agricultural Experiment Station, Geneva

Reprint from Bulletin 50

SPECIFICATIONS FOR SUCCESSFUL FRUIT-GROWING

Professor U. P. Hedrick
Horticulturist, New York Agricultural Experiment Station, Geneva.

THE SITE

All subsequent efforts fail if a mistake is made in selecting the site for operations. In growing fruit for the market certain economic considerations imperatively demand attention; as distance to market, means of transportation, labor, storage, competition, disposition of by-products, cost of production, and overproduction. Any of these may prove a determinant of success. " The weakest goes to the wall " applies in the business of growing fruit as well as in other business enterprises. In growing fruit for home use, these economic factors may be ignored. There are natural factors, however, which must be observed in growing fruit for either home or market.

The first of these is latitude. A man must select fruits, and even more particularly varieties, with reference to latitude and its equivalent, altitude. It is easy enough to select the fruit for a region in a certain altitude or latitude but it is far from easy to select the varieties of a particular fruit. Thus, the Ben Davis, Winesap, Romanite and York Imperial groups of apples belong in southern latitudes, while the Concord grape and its seventy or more named offspring belong to the North. So with all varieties of our fruits; they are either northerners or southerners and should be grown where they belong. Still the metes and bounds of latitude may be set aside by such local modifications as hills, valleys, bodies of water, direction of winds and distribution of sunshine.

SOILS

The soil largely determines the value of a location for a fruit plantation. Special fruits have special soil adaptations: The peach grows on sand; the plum on clay; apples and pears on loams. Individual varieties of any fruit also do better in some soils than in others. The fruit-grower must discover what these preferences are. The chemist can help but little here; in most cases an actual test in the field is the only way of knowing whether a variety will or will not thrive in a soil. One property of the soil is too often neglected; namely, its heat-retaining properties. Some fruits, as the peach and the grape, require warm soils; apples and pears will thrive in cooler lands, but, in general, a cold, heavy, close soil is a poor one for any fruit.

VARIETIES

What varieties shall I plant? This question we have touched upon in previous paragraphs and it only remains here to be said that out of the thousands of varieties of the several fruits even the few best ones may be most readily characterized by their faults — showing how necessary it is to make careful choice of varieties. An intimate first-hand knowledge of varieties in the planter's own locality is the only way to become competent to choose the sorts to plant. Consideration will in most cases lead him to choose standard varieties.

TREES

It is as difficult to select trees as it is to make a choice of varieties. Trees grown near home are somewhat better than those brought from a distance. Every precaution should be taken in buying to insure trees true to name and free from pests. Other things being equal, a short, stocky tree is better than a tall, spindling one; one with many branches, better than one with few; and always the root system should be well developed.

" PEDIGREED " TREES

The idea is current that fruits can be improved by bud-selection. It is held that the variations in fruit, tree, productiveness, vigor and hardiness to be found in varieties of fruit, can be reproduced by taking cions or buds from the plants possessing the variations. Nurserymen are putting this theory in practice and trees are now offered for sale with a " pedigree " to show that they came from " good " ancestry. But there is no evidence that any sort of fruits has come into existence by continuous selection; that any variety has been improved through the cumulative action of selection. No experimental evidence has been offered to prove that varieties of fruit can be changed in the least by continuous bud-selection. Fruit-growers should steer clear of "pedigreed stock" and "improved strains" of varieties until the new production can be seen somewhere by competent judges growing side by side with the parents.

STOCKS

Apples may be bought upon Paradise, Doucin, or homegrown or French-grown standard stocks. The first two named are suitable only for the amateur, and, of the standards, those on the foreign seedlings are usually much the better. Pears are grown as standards on French seedlings or as dwarfs on the Angers quince. The dwarfs are gradually going out of vogue. The peach should be worked upon seedlings from southern pits and not upon those from cannery seeds. Sour or sweet cherries on Mazzard stock are far superior to those on the Mahaleb stock. Plums are grown upon several stocks and no one seems to know which are the best for the several species of this fruit, the different types of soil, and the hundreds of varieties.

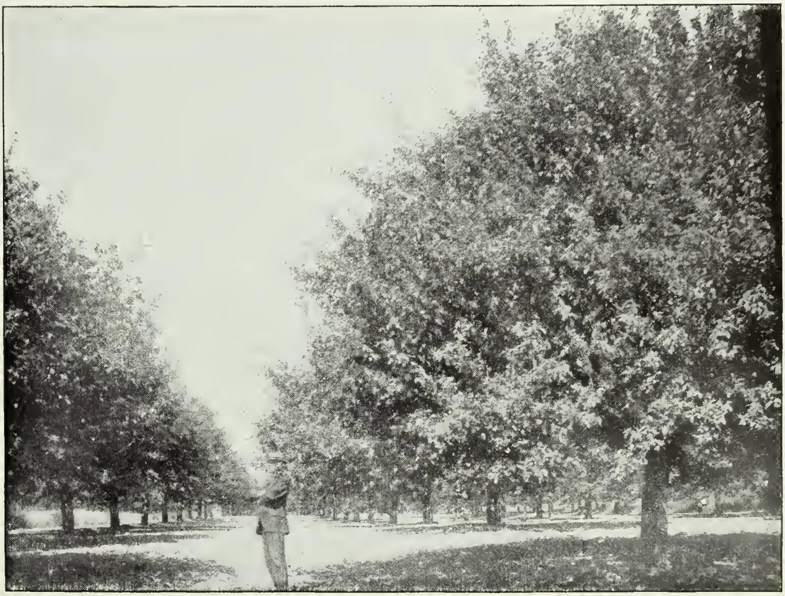

FIG. 125. A WELL-TILLED ORCHARD

THE PLAN

How the orchard is to be laid out — in squares, quincunxes, hexagons, with or without fillers, and at what distances apart? Planting in squares is best because it permits orchard operations to be carried on most readily. Both roots and branches will utilize all of the space. Fillers of fruits other than varieties of the same species as the permanent trees are not desirable, since they greatly complicate orchard operations. Fillers of quick bearing varieties of the same fruit, especially the apple, may often be used to advantage. There should be as many " outside rows " as possible. That is, the trees should be far enough apart for each to develop in full its individuality, as the trees on the outside of the orchard produce most fruit, since they get most air, sunshine, wind, moisture and food.

" IMPOTENCY "

Fruit does not set in this region for the most part because of frosts, cold weather, rains and heavy winds at blooming time; but still there are some varieties of pears, apples, grapes and plums that are self-sterile. The remedy is mixed planting of varieties that bloom at the same time. It is important that the fruit of all of the varieties planted have value as it is not worth while to encumber land with a sort fit only for a pollinator. Contrary to a very general notion the fruits themselves are not greatly changed, if at all, by cross-pollination.

TIME AND AGE TO SET

There is a marked gain in setting varieties of apples late in the fall if the trees be two-year-olds. All other fruits and one-year-old apples should be set as early as possible in the spring. Two-year-old trees are usually to be preferred to those but one year old if they have been properly headed in the nursery. With the peach, one-year-old trees should always be planted.

DYNAMITE

There is little positive evidence to show that trees thrive better in holes made by using dynamite, and until such evidence is forth-coming it is better that the holes be dug, as it is quite as probable that harm rather than good will be done through the use of explosives.

TOP-WORKING

The practice of setting a thrifty variety of apples or pears and grafting or budding a weaker or less healthy variety wanted, has many advocates. This top-working is probably a procedure worth while with a very few varieties. In general, however, the chances of getting malformed, lop-sided trees and of delaying the bearing period are so great that top-working cannot be recommended except for a very few sorts that seem difficult to grow on their own roots. They can be best top-worked in the nursery.

PRUNING AT TRANSPLANTING

We are ready to set the tree and the problem of pruning is before us. It is necessary to cut away part of the branches to enable the injured root system to supply the remaining branches with water. The less the roots are injured the less the top need be cut away. The common way is to cut back all of the branches. This, in many cases, is wrong. The top buds on a branch develop soonest and produce the largest leaves. A newly set tree will grow best if it can develop a large leaf surface before dry, hot weather sets in, and this it will do if some branches are left intact. Therefore, instead of shortening-in all branches, cut away some of the branches entirely. The tree so pruned will start growth and acquire vigor more quickly.

HEIGHT OF HEAD

A choice must be made at the start as to the height of the head. The choice should usually be for a low-headed tree for the reason that such a tree is more easily sprayed and pruned and the fruit more readily thinned and harvested; crop and tree are less subject to injury by wind; the trunk is less liable to injury by sunscald, winter-killing and parasites; the top is more quickly formed and the low-headed tree soonest bears fruit. No advantage as to cultivation is gained by either method over the other, as a well trained tree with a low head, in which the branches ascend obliquely, permits the cultivator to come sufficiently near the tree. By low-headed is meant a distance from earth to the first limb of from one to two feet. The peach may be headed at the lower distance, the plum, pear and cherry somewhat higher, while the apple should approach the upper limit.

FORM OF HEAD

Two general types of top are open to choice; the vase form or open-centered tree, and the globe or close-centered tree. In the first the framework of the tree consists of a short trunk surmounted by four or five main branches ascending obliquely. In the close-centered tree the trunk is continued above the branches, forming the center of the tree. There are several modifications of each of these. In this climate the open-headed, vase-formed tree is best for the peach and the close-centered two-story tree is best for all other fruits. Whatever the form, care should be taken that the lowest branches are longest, so that the greatest possible leaf-surface will be exposed to the sun and light.

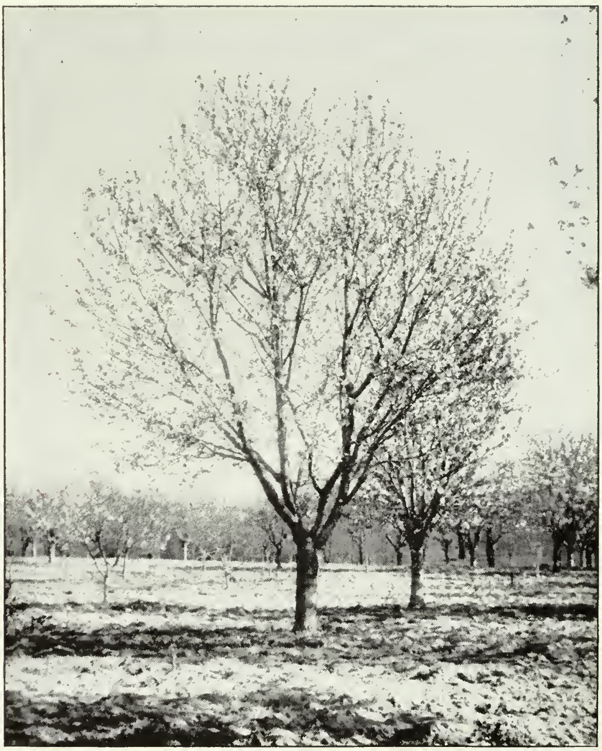

FIG. 126. A WELL-PRUNED SWEET CHERRY ORCHARD

PRUNING FOR WOOD

For several years after planting, the peach alone excepted, fruit trees need to be pruned only to train the tree. Just how much to prune young trees depends upon the fruit, the variety, the soil and the climate. Fruit-growers usually prune trees too much, thereby increasing the growth of wood and delaying the fruiting of the plant. If trees were originally well selected, all that is needed is to remove an occasional branch which starts out in the wrong place — the sooner done the better — and to take out dead, injured or crossed limbs. The peach, some plums and some pears may need heading-in, and a weak or sickly tree may require somewhat more severe pruning.

If a tree is bearing many small fruits, if the top contains dead or dying branches, or if the seasonal growth is short and scant, it may be taken for granted that the tree lacks vigor; or, in old trees, is passing into decrepitude. Such trees may usually be rejuvenated by judicious pruning. In professional terms the tree must be " pruned for wood." Such pruning consists in cutting back a considerable number of branches and in wholly removing others. In pruning for wood the following rules are usually applicable:

Weak-growing varieties may always be pruned generously; strong-growing kinds, lightly.

Varieties which branch freely need little pruning. Those having unbranching limbs should be pruned closely.

In cool, damp climates trees run to wood and need little pruning. In hot, dry climates they need much pruning.

Rich, deep soils favor growth; prune trees in such soils lightly. In shallow, sandy soils, trees produce short shoots, and the wood should be closely cut.

PRUNING FOR FRUIT

A barren tree can sometimes be made to bear fruit by proper pruning. Not infrequently barrenness is caused by over-manuring or over-stimulation of some kind, because of which the number of shoots and leaves are greatly increased, but flower buds do not form. This over-production of wood and leaf can sometimes be stopped by breaking or cutting off the greater portion of the season's growth in the summer. Summer pruning is a weakening process and in this climate may greatly decrease the vigor of the plants if frequently resorted to. The practice is neither common nor often necessary in this state except in the case of dwarf apples and pears.

PRUNE ACCORDING TO HABIT

In pruning, the habit of the tree must always be considered. When trees have a spreading, drooping, or long, slender habit of growth, prune to buds that point upward or to the center of the plant. If the habit be upright and dense, cut to lower or outer buds and so spread the compact top. The "off-year" habit of bearing is intensified by spasmodic and severe pruning. Prune biennial bearers rather conservatively and early. The heads of all young trees may be left fairly dense, for when the trees come in bearing, the weight of the crop opens the head; meanwhile, by saving the foliage you have obtained a larger trunk and more bearing wood.

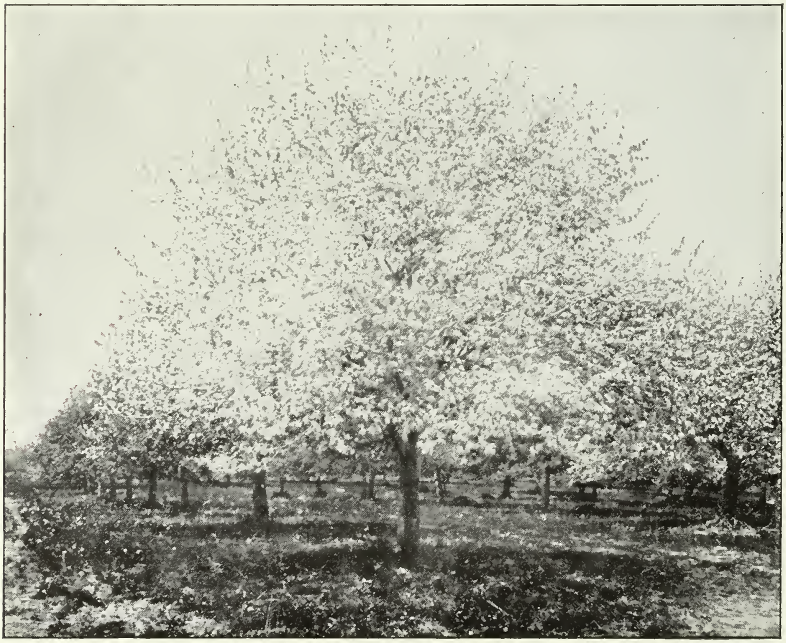

FIG. 127. A WELL-HEADED APPLE TREE

HEADING-IN

Heading-in makes the top of a tree thicker and broader. There are but few orchards or even trees that do not need more or less heading-in at some time in their history. But in our climate this form of pruning is practiced only with peaches and some plums, and is but little needed with other fruits. In winter pruning, the cutting back of exceedingly long branches for the thickening of the top of occasional trees or varieties is the exception rather than the rule. Peaches and some plums bear fruit on the wood of the past season. The crop is borne progressively away from the trunk. It is necessary to head in these fruits to keep the bearing wood near the trunk. Apples, pears, most plums, and cherries are borne on spurs from wood two or more years old, and, therefore, with these heading-in is not a regular practice.

SUCKERS

When a tree is severely pruned a growth of long, vertical shoots with few leaves often follows — suckers or water sprouts. Since the sparseness of foliage prevents the shoots from elaborating food they appropriate it from the parts upon which they grow. Suckers are, therefore, parasites, and should be removed whenever and wherever found. Occasionally they may be used in the development of normal branches, though their value for this purpose is small.

THE CUT

The cut in pruning should always be made parallel with the trunk, as close as possible, and just beyond a healthy lateral branch. The reason for so cutting is plain. The lateral branch is stimulated to produce a great number of leaves which assimilate sap. This elaborated food passes back through the inner bark near the newly made cut and the wound quickly calluses and heals because it thus has access to an abundant supply of food.

Wounds over three inches in diameter seldom heal; decay sets in and there soon follow rotten wood, a hollow branch and a diseased tree. The life of a tree is endangered whenever a large branch is removed, and such an amputation should be made only under dire necessity. One of the secrets of the healing of large wounds is to cut close to the trunk, and no matter how large a wound may be it is better than leaving a projecting stub. The chances for healing with a large wound are materially increased by a coating of thick lead paint to protect the cut surface from evaporation and moisture.

TIME TO PRUNE

The best time to prune is late winter before the sap flows. The objection to early winter pruning is that there may be injury to the tissues near the wound from cold or from checking. Late spring pruning results in loss of sap and the fluids run down the bark and keep it wet and sticky, making a suitable place for the spores or various rot fungi so that decay may set in. In practice it is often found necessary to prune from the time leaves drop until they are well started in the spring.

CULTIVATION

Cultivation is generally practiced with all fruits except the apple. Some claim that this fruit can be grown better in sod; in which case the grass may be cut as a mulch or it may be kept down by sheep, pigs or cattle. The New York Agricultural Experiment Station has two experiments to test sod and cultivation. The following table shows the outcome of one of these experiments at the end of five years:

EXPENSE AND INCOME FROM A SOD-MULCHED AND A TILLED ORCHARD

Year	Sod plat — 118 trees				Tilled plat — 121 trees			
	Cutting grass	Harvesting crop	Total expense	Net income	Cultivation	Harvesting crop	Total expense	Net income
1904......	$19.99	$219.25	$327.14	$225.76	$33.75	$210.90	$332.55	$185.34
1905......	7.46	82.89	166.47	330.28	48.71	96.85	221.68	355.60
1906......	3.36	104.30	186.29	154.96	30.30	231.80	340.73	392.42
1907......	3.67	138.07	239.28	487.16	46.63	224.20	371.35	800.31
1908......	6.14	173.43	246.88	353.86	36.67	338.59	447.82	723.41
Total...	$40.62	$717.94	$1,166.06	$1,552.03	$196.06	$1,102.34	$1,714.13	$2,457.08

Allowing 27.2 trees to the acre, these figures show that the average expense of production, including picking and marketing, was $53.75 an acre annually under the sod-mulch system and $76.06 under tillage, an advantage for the sod-mulch of $22.31 an acre;

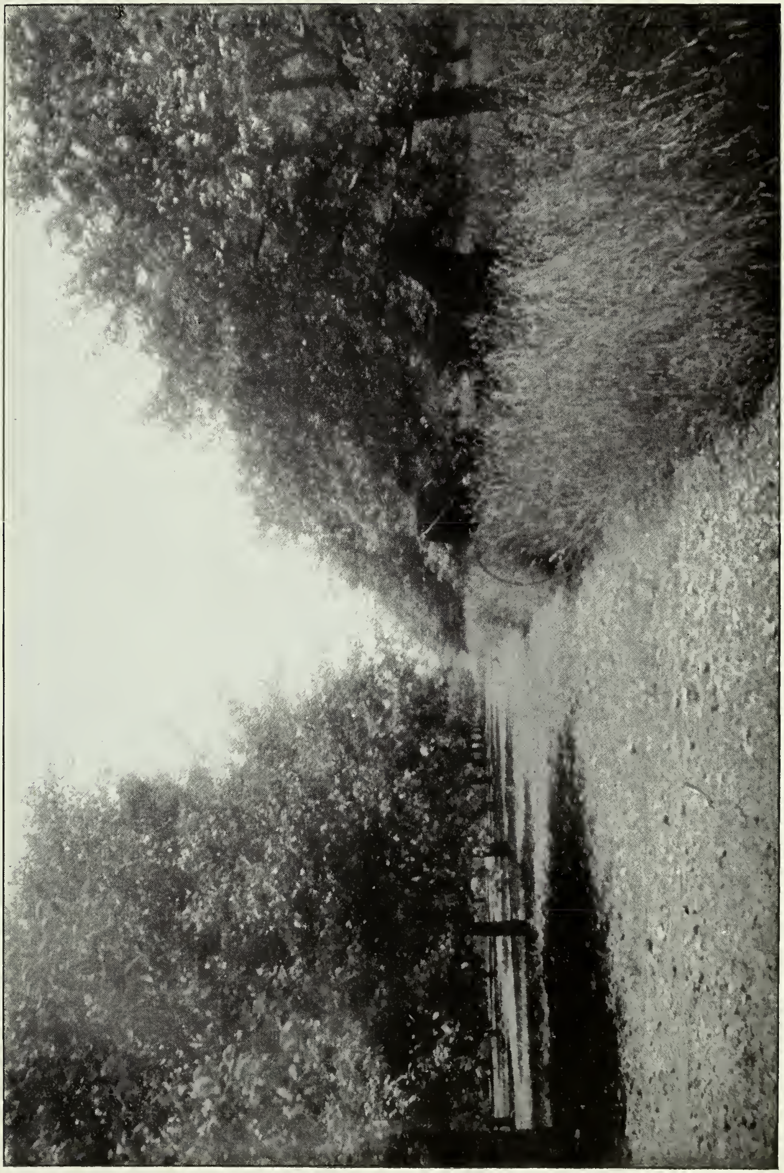

FIG. 128. TILLAGE VS. SOD-MULCH IN THE AUCHTER ORCHARD

but the *net income* from an acre in sod was $71.52 and from an acre in tillage $110.43, an advantage for tillage of $38.91. That is, every dollar of the additional expenditure ($22.31) made necessary for adopting the tillage method was not only returned but brought an extra $1.74 of profits with it.

FERTILIZERS

Is it necessary to fertilize an apple orchard? In the average western New York tilled apple orchard, if it be well drained, well tilled and properly supplied with organic matter from stable manure or cover crops, commercial fertilizers are little needed. The exceptions will probably be found on sandy and gravelly soils deficient in potash or the phosphates, and subject to droughts; or on soils of such shallowness or of such mechanical texture as to limit the root range of the apple plant; or in soils so wet or so dry, or so devoid of humus, as to prevent proper biological activities in the soil. There are probably many apple orchards in New York that may be benefited by an application of one of the chief elements of fertility. Some may require two of the elements. Few, indeed, should require a complete fertilizer.

How may a fruit-grower know whether his trees need fertilizers? It may be assumed at once that if trees are vigorous, bearing well and making a fair amount of new wood each season, they need no additional plant food. If the trees are not in the healthful condition described, the logical thing to do is to look to the drainage, tillage and health of the trees first and the more expensive and less certain fertilization afterward.

As a last resort, fertilizers ought not to be used to rejuvenate trees unless the owner has obtained positive evidence that his soil is lacking in some of the elements of plant food. To obtain such evidence a fruit-grower should carry on a fertilizer experiment.

In making such a test, select a portion of the orchard as uniform as possible, both in soil and varieties. If available, use at least five trees for each plat and on different plats use fertilizers about as in this Station test: (1) Acid phosphate to give about 50 pounds of phosphoric acid to the acre, or 13 pounds of 14 per cent. phosphate to each tree if they stand 40 feet apart; (2) phosphate as above and muriate of potash to give 100 pounds of potash to the acre, or 8 pounds of muriate per tree; (3) phosphate and muriate as above and nitrate of soda and dried blood to give 50 pounds of nitrogen per acre, or 13 pounds of medium grade dried blood and 3⅔ pounds of nitrate of soda per tree. This nitrogen might also be supplied in six tons of good stable manure to the acre, or 400 pounds per tree; (4) this amount of stable manure should be applied on a fourth plat, and (5) a similar plat should be left unfertilized for a check. This experiment is much less laborious and complex than it looks, for the fertilizer combinations are built up one from another and the mixing can be done and quantities weighed out in winter when orchard work is not pressing.

The fertilizers should be applied in the spring as soon as the ground can be worked, spreading them about the trees over an area somewhat greater than that covered by the spread of the branches. Apply the manure before plowing, and the fertilizers immediately after it, harrowing them in. The experiment, to be conclusive, should run for several years and the crops should be carefully weighed or measured, giving due consideration to culls and windfalls.

INTER-CROPS

The best modern practice permits the growing of hoed crops in an orchard until the trees come into bearing. If profitable disposition can be made of the product, truck crops are ideal for a young orchard. Of these peas and beans take less from the soil than other crops and may add a little nitrogen to it. But beside these, cabbage, potatoes, cucumbers or similar crops may be grown advantageously. Corn is the only farm crop permissible and is not as desirable as any of the truck crops named.

COVER CROPS

The best modern practice insists that a cover crop be sowed at the close of the season's cultivation, about August first, to be plowed under the next spring. Various crops may be sown alone or in combinations. The several purposes of a cover-crop — to cover the ground, and add humus and nitrogen — are usually best served by a combination crop. Of several that may be recommended, this Station prefers the following: On each acre sow one bushel of oats or barley and fifteen pounds of mammoth red clover or thirty pounds of winter vetch.

PESTS

Spraying is indispensable but the fruit-grower can so plant as to avoid some of the warfare with pests. Thus King, Roxbury and Northern Spy among apples are nearly free from scale as are the Kieffer, LeConte and Winter Nelis pears, Bradshaw and Field plums and all sour cherries. There are about thirty varieties of apples on the grounds of the New York Agricultural Experiment Station never injured by scab, as many more scarcely injured, and of course a large number that are badly injured. The Seckel Kieffer, Le Conte and Winter Nelis pears do not blight badly. A few plums are never attacked by black-knot and some peaches are almost immune to leaf curl. Now with these, and nearly all other pests, men who cannot or will not spray, the general farmer and the city suburbanite, for example, should plant varieties measurably immune to the most troublesome pests. Commercial fruit-growers must spray.

MICE AND RABBITS

It is necessary to protect young trees from mice and rabbits. The best protection against mice is a mound of earth about the tree several inches high, thrown up in late fall and removed in early spring. Wire netting is the best protection against rabbits. When injury has been done the trees can often be saved by bridge-grafting.

CONCLUSION

Fruit plants are various in kind and trees of one kind are often quite unlike because the conditions under which they are grown are dissimilar. It follows, then, that conditions must vary for every person who grows fruit and that there must, therefore, be more or less diverse ideals, diverse methods and diverse results. But certain forces, embraced in what we call "good care," have brought all fruits from the wild to their present state of domestication, and these forces modified and refined as we gain new knowledge, must be kept in constant operation.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

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AUG 21 1915

Circular 76

Concrete on the Farm

BY

ELLIS M. SANTEE, M. D.

Director of Agriculture, Good Will High School, Hinckley, Me.

Reprint from Bulletin 50

CONCRETE ON THE FARM

Dr. Ellis M. Santee

Director of Agriculture, Good Will High School, Hinckley, Me.

Concrete is an artificial stone. It has a particular interest for the farmer because of its cheapness, simplicity and durability. Usually all of the materials required, except cement, are found on or near the farm and he can readily shape them to his will, the result becoming harder and harder as time goes on for about four years.

Concrete on the farm received a black eye in its early days on account of mistakes in construction. It is so porous and absorbs water so readily that it makes a cold, unsatisfactory building or floor in or on which to keep an animal, unless it is properly insulated. Both of these problems have been satisfactorily solved and there is now no reason why every building on the farm should not be built of concrete.

MATERIALS

The materials usually used are cement, sand, crushed stone, gravel or hard cinders. The sand should be sharp, not too fine, and as nearly free from loam as possible. It is always best to test sand from a new source by filling a glass fruit jar about two-thirds full, then filling with water, thoroughly shaking and letting it stand over night. The thickness of the layer of loam on top should then be measured. If its depth is more than one-twentieth of that of the sand underneath, it should be discarded, since sand containing more than 5 per cent. of loam is not safe to use in concrete construction. If gravel is used, a sample of it should be examined by sifting out all of the sand. If the proportion is about three of sand to five of gravel it is safe to use in most farm construction as it comes from the pit and should have about one of cement to eight of gravel and sand for coarse work. If crushed stone and sand are used, the proportions should be from two to four of sand to four to six of crushed stone and one

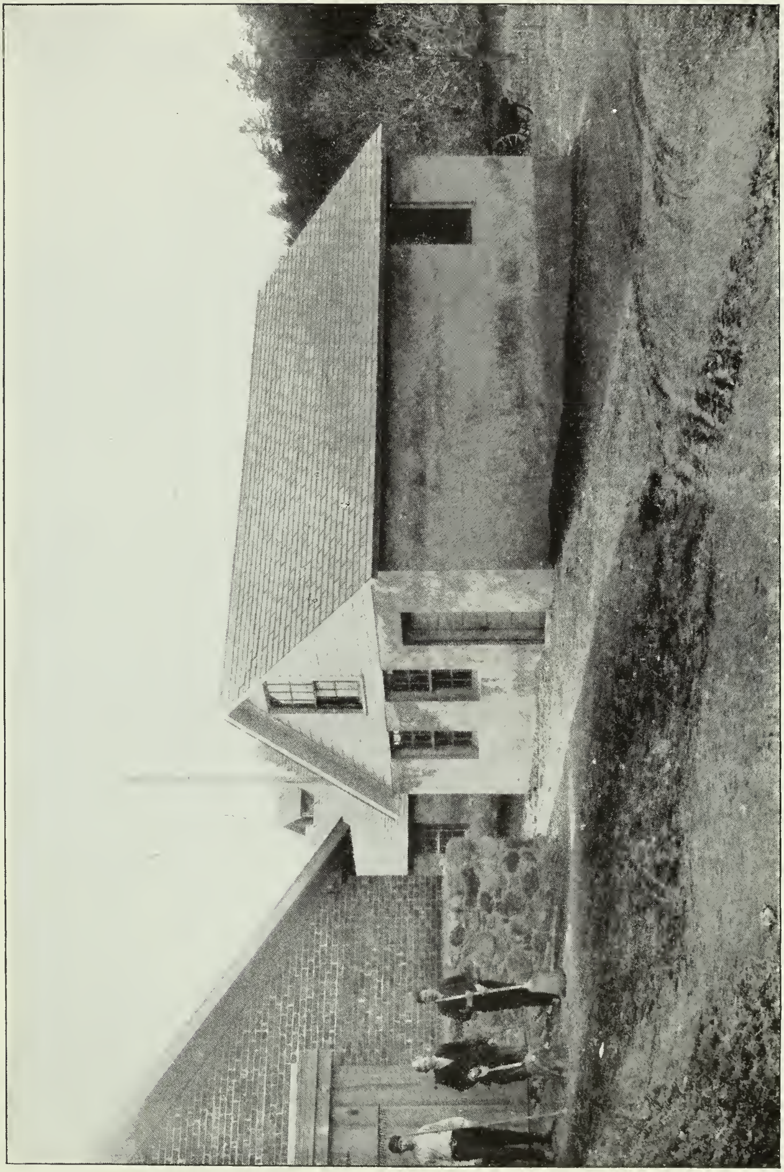


Fig. 144. Concrete Milk House at Berkshire Industrial Farm, Canaan, N. Y.

of cement, depending upon the size of the stone and the coarseness of sand. In other words, the coarser the material used, the less cement is required to fill all of the voids.

Hard cinders where they are convenient for the work, make an excellent and economical concrete. The fine material in them need not be sifted out; in fact, most cinders furnish enough fine material to take the place of sand entirely in most farm construction. I have built two buildings with cinders and cement alone with perfectly satisfactory results. To demonstrate the proportions of any kind of material required, provide a water-tight receptacle and measure accurately, fill level full with the coarser material to be used, then carefully measure in water enough to fill the vessel. The proportion of water to the size of the vessel will indicate the amount of sand required to fill all of the voids in the coarser material, then by mixing this coarser material with the indicated proportion of sand, again filling the vessel with the mixture, and then with water, the proportion of water used will indicate the amount of cement required with this mixture of these materials to make an artificial stone.

MIXING

A convenient way of measuring materials for the mixing board, is to provide a box 24 inches long, 12 inches wide, and 11½ inches deep, with no bottom, and handles on either end. This box will hold just two sacks of cement, which is about the amount used for the ordinary batch in farm work. After filling it on the mixing-board it is emptied by lifting the box off the materials; beginning with the coarser material and finishing with the cement. Thorough mixing is essential to success and it must first be done while the materials are dry. The only safe guide to determine the completeness of the mixture is its color. If it is streaked it is not mixed thoroughly no matter how many times it has been turned. Use a shovel and shovel from the bottom of the pile, sifting the materials off the edge of the shovel upon the apex of a new pile. If this method is followed, three turnings will usually be found sufficient. Successful concrete work requires that the materials be placed in the form as quickly as possible after they are mixed.

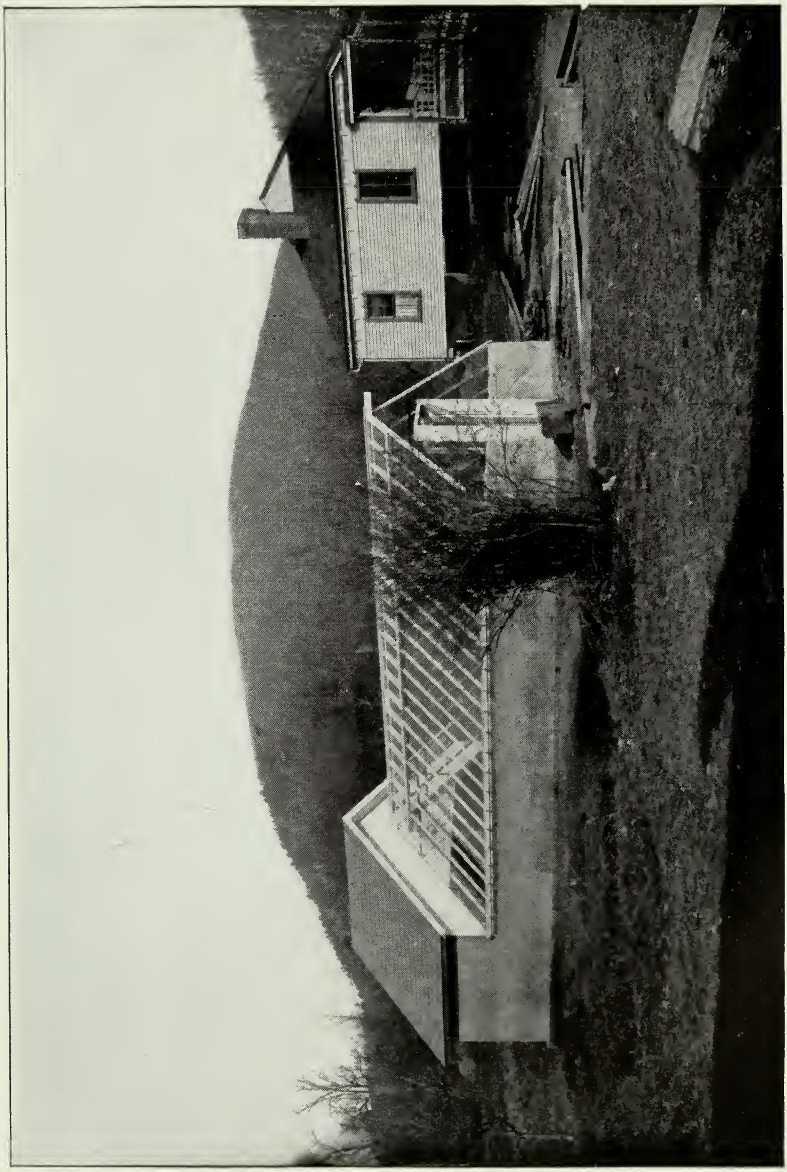


FIG. 145. CONCRETE HOTHOUSE AT BERKSHIRE INDUSTRIAL FARM, CANAAN, N. Y.

FORMS

In placing forms for concrete great care should be taken to have them strong enough to remain where wanted. In putting up a solid wall with forms, it is well not to build too great a depth without sufficient time for the lower coarse to harden as the great weight makes many forms give way at the bottom. If the wall be a high one, or the ribs used not very substantial, it is well to wire across one or two places between the board or plank forms, then it is simply a matter of clipping the wires at the surface before putting on the finishing coat.

RE-INFORCEMENT

Concrete, while having great resisting powers, has little tensile strength, consequently, any construction requiring the latter must be re-inforced with iron or steel. A roof, fence post, watering trough, corners and partition walls, may thus be greatly strengthened at slight expense. Material required for ordinary farm work may easily be obtained from the junk men, or many times from the farm machinery grave yard. Roofs may be most economically re-inforced by the use of ordinary woven wire fencing; if the span is more than ten feet, a reinforced rafter, having one inch in width and one in depth to each foot in width of roof, should be used.

INSULATION

One of the chief sources of dissatisfaction with concrete on the farm has been lack of insulation. This problem has been solved in building sidewalls by the use of a machine now on the market, which not only makes an insulated building having an air-space from bottom to top, but it also obviates the use of all forms; thus greatly cheapening the cost of installation, making a building that is warm in winter, cool in summer, and always dry.

The best method of insulating a floor was given us several years ago by Dean Cook, which is to bury tar-felt roofing in the floor. A simple method is to spread about one inch in depth of concrete, smoothing it down with a float or hoe, laying on the tar-felt roofing, then placing the balance of the concrete on top of the roofing. The first method was to paint this thoroughly with coal-tar, but this has been found to be unnecessary.

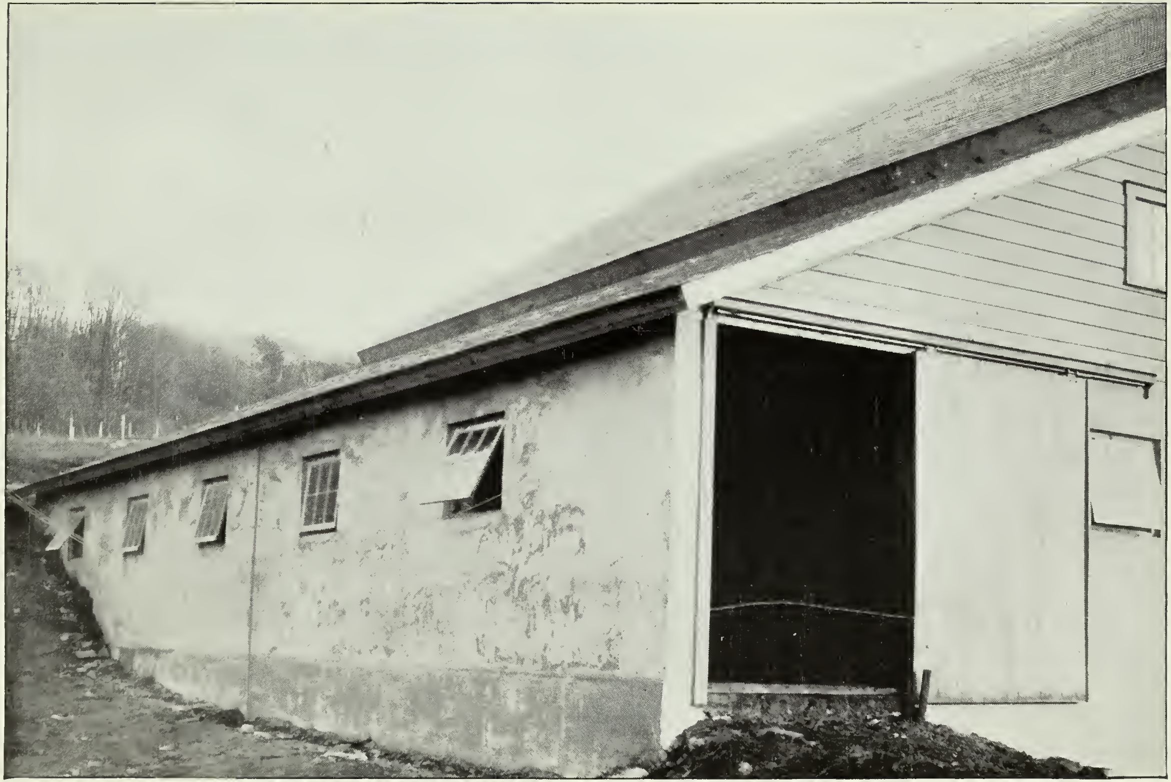


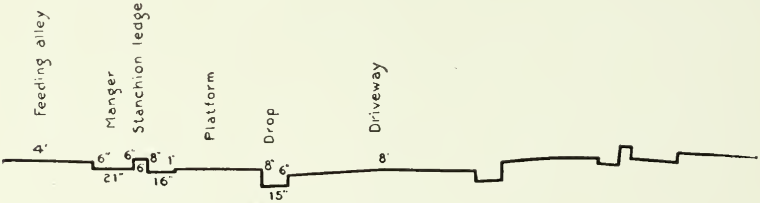
FIG. 146. CONCRETE HORSE STABLE AT BERKSHIRE INDUSTRIAL FARM, CANAAN, N. Y.

SILOS

A great many farmers now having wooden silos nearing the end of their usefulness, are using them as forms for concrete; and a very satisfactory method is to tack one-half inch furring strips vertically about twelve to sixteen inches apart on the inside of the silo, then lining with metallic lath, thoroughly stapled to the furring strips, and plastering with a mixture of about nine of cement to one of hydrated lime and thirty of medium coarse sharp sand, finishing with a whitewash brush and neat cement as described in the finishing paragraph. In building a new silo, by the use of the hollow-wall machine, a 15 x 32 silo recently constructed cost $173.85 to the roof; the owner figuring his team work, hauling gravel and sand at four dollars per day. This silo had two walls, each four inches in thickness, a 2½ inch air-space, and a continuous door. It is practically indestructible and cost less than some of the more perishable ones.

DAIRY STABLE FLOORS

Much experimenting has been done on the various forms of stable floor, but the one indicated by the accompanying diagram is probably more often adopted by New York State dairymen than any other, and gives the best results of any that I have seen.



Scale ¼" to foot

OTHER FARM CONSTRUCTION

A very little ingenuity will enable any farmer to make his watering troughs, smoke-house, dairy, spring-curbs, fence-posts, floors and walks of concrete, and if properly put down, never wear out and are always satisfactory.

FINISHING

There are many methods of finishing concrete surfaces. A fairly smooth and satisfactory finish is easily applied by the use of a whitewash brush. The wall should be thoroughly dampened and a very thin coat of clear cement and water mixed to about the consistency of the ordinary pancake batter, applied with a plastering trowel, and allowed to become partially hardened. It is then gone over carefully with a whitewash brush dipped in cement and water, about the consistency of ordinary cream. This gives a waterproof, as well as very pleasing, finish. There are various forms of stucco finish; the one more ordinarily used being the floated one and applied as follows: Thoroughly dampen the wall, take nine parts of cement, one part of hydrated lime, and forty to fifty parts of sand, depending upon its coarseness. All pebbles should be carefully sifted out. This is mixed to about the consistency of the ordinary plastering material and spread on as evenly as possible with a trowel. After it becomes about two-thirds set — which will be in from twenty minutes to an hour, depending upon the weather — it is gone over with a float, with a circular motion, all unevenness removed and the sand brought to the surface, leaving an even, rough finish, the roughness depending upon the kind of float used; the hard wood float making the smoother finish. If a very rough finish is desired, it may be accomplished by tacking a piece of felt or carpet over the face of the float. If the stippled finish is desired, proceed as above, only very soon after the plaster is applied, have some one follow with a broom, sponge, or brush. A very satisfactory implement is the wire brush used by the foundry-men for removing sand from castings. Care should be used that the stippling be evenly done, and it will be found that seldom will two people stipple alike. In the pebble-dash proceed as above until the plaster is applied, and follow immediately by dashing with the hand, a shovel or a whisk broom, a mixture of sand, or small pebbles and cement. If sand, about one to two and one-half, and if pebbles about one to six, upon the freshly plastered surface. This finish is easily applied and makes a very satisfactory one. Where various colored pebbles from the brook or other source are used, and the colors are desired to be shown in the building, a dilute solution of hydrochloric acid about one to eight, applied to the pebbles the following day will remove the cement and bring out the natural colors. There are various other forms of finish, all of which are more or less complicated, and the above will probably furnish sufficient variety for all farm purposes.

STATE OF NEW YORK

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AUG 21 1915

Circular 77

The Three Leading Breeds of Beef Cattle

BY

W. D. ZINN
Farmers' Institute Lecturer

Reprint from Bulletin 50

THE THREE LEADING BREEDS OF BEEF CATTLE

W. D. Zinn
Farmers' Institute Lecturer

Ask a dairyman to name the leading dairy breeds and he will intuitively answer, "Jerseys, Holsteins, Guernseys and Ayrshires." You may also ask any experienced producer of beef cattle to name the principal beef breeds and he will very positively assert that there are but three breeds of very great importance; namely, Shorthorns, Herefords and Angus.

It is the object of the writer to deal principally with the merits and demerits of these three breeds. In so doing, he is not unmindful of the fact that there are still other breeds that have some good qualities,— the Galloways, Red Polls, Brown Swiss, Polled Durhams and Devons.

SHORTHORNS

Shorthorns are so-called from the character of their horns. They are sometimes called Durhams because they originated in Durham County, England. Many centuries ago, there existed in the counties of Durham and Yorkshire and especially in the valley of River Tees, a type of large cattle which were the ancestors of the Shorthorn breed. There were two strains of these cattle called Teeswater and Holderness, but they have long since been blended.

Among the Shorthorns of today there occasionally is found what is called a Teeswater animal, that is an animal with very peculiar hindquarters and rounding in the rear. Their meat is said to contain less fat and to be somewhat coarser. These are found only among the Shorthorns, and it is due to the fact that more than two hundred years ago they were bred up from this breed. It only shows the prepotency of that breed. The following includes some of the early breeders of Shorthorns: Colling Brothers of Ketton, who began their work in 1780. At the dispersion sale of these brothers in 1810, many good animals were scattered over the country which greatly improved the cattle of that section. Thomas Bates commenced breeding Shorthorns at Kirklevington

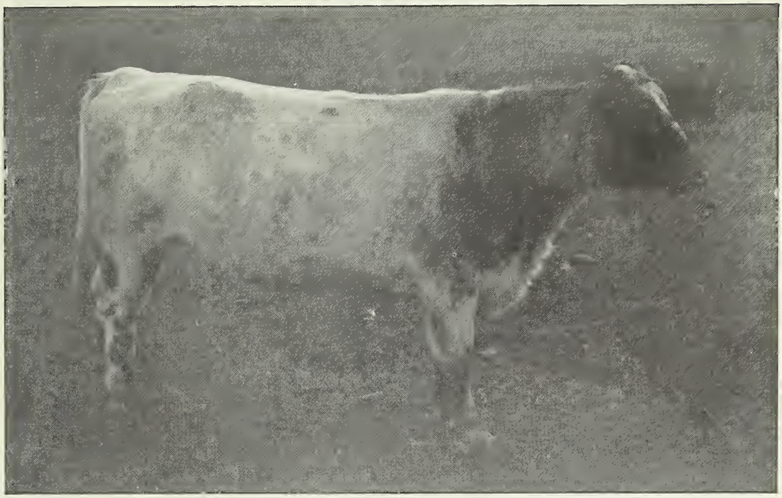

FIG. 147. SHORTHORN COW, OWNED BY COTTRELL VALLEY FARM, HOOSIC FALLS, N. Y.

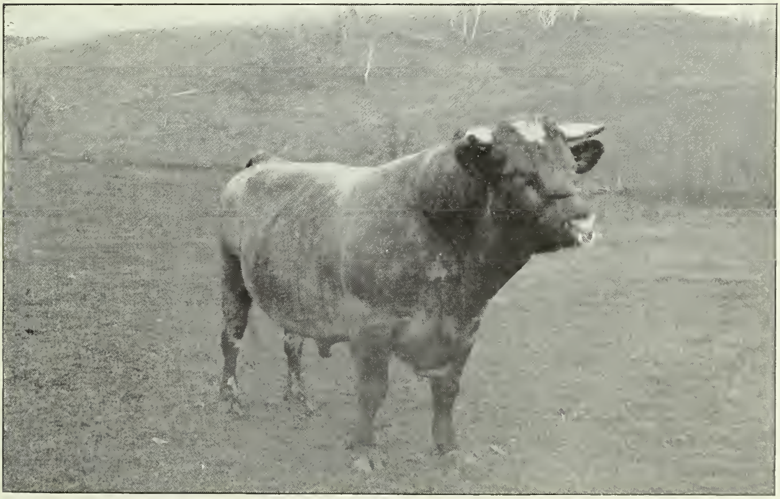

FIG. 148. SHORTHORN BULL, OWNED BY COTTRELL VALLEY FARM, HOOSIC FALLS, N. Y.

about the close of the eighteenth century, and there is a strain of Shorthorns that bears his name to this day. Richard Booth founded his famous herd at Studley about 1790, and the Booth strain of Shorthorns is still found. These two strains were crossed by Amos Cruikshanks of Sittyton, Aberdeenshire, Scotland. His work resulted in the best strain of Shorthorn yet produced. Both the Bates and the Booth strains had serious objections, the Bates being too "horsey" as the breeders sometimes put it; in other words they are too long-legged. The Booth Shorthorns are not so objectionable in this respect, but they are plain in the head and have heavy horns. The Cruikshanks strain, or Scotch Shorthorns as they are usually called, are more compact, shorter-legged, and better in all respects. They have won more prizes in recent years than both the other strains combined.

Between 1783 and 1795, the first importation of Shorthorns was made into America by Messrs. Goff and Miller of Virginia. The first direct importation of Shorthorns into New York State was made by Samuel M. Hopkins of Moscow, 1815. The most notable sale of Shorthorns ever held was that of Messrs. Campbell and Wolcott of New York Mills, New York, 1873. The one hundred and eight animals of all ages sold, aggregated $382,000. One Duchess cow brought $40,600 which at that time was the largest price ever paid for a cattle-beast.

One of the advantages of the Shorthorns over the two other breeds under discussion, is that they are better milkers. If there is any such thing as a dual-purpose animal among cows, she is a Shorthorn. They will cross better than either of the other breeds,— where there is a drop of Shorthorn blood it always crops out. If Shorthorn bulls are bred on scrub cows, the offspring will make fairly good cattle. Shorthorn cattle will grow larger than either of the other breeds.

Some of the disadvantages of the breed are: Having been inbred so long they are not quite so hardy as the others,— this is especially true in the winter seasons; they take longer to mature. It is harder to make baby beef from Shorthorn cattle than from either of the other two breeds. If matured at an early age, they must have a good quantity of grain, which in a grazing country is an undesirable characteristic. The fat and lean are not as well intermixed as in other breeds.

HEREFORDS

Prior to the last half of the eighteenth century but little is known of the Hereford cattle. They are therefore not as old a breed as the Shorthorns; that is, they have not been bred so long along distinctive lines. The original cattle were a solid red, and they were crossed with the white cattle of Wales, thus enlarging their frames and giving them white markings. In the eighteenth century they became noted for their good grazing and beef-making properties. The most noted of the early improvers of this breed was Benjamin Tompkins and his son. Like Batewell, he improved his cattle through the most careful selection, in mating, and through in-and-in breeding. The first importation of Herefords was made into the United States by Henry Clay in 1817. William H. Sotham, of New York, who has done more to advance the Hereford interests than any other man, perhaps, made three importations into the State of New York. Nearly every state in the Union has its quota of Herefords, but they are most numerous in the Southwest.

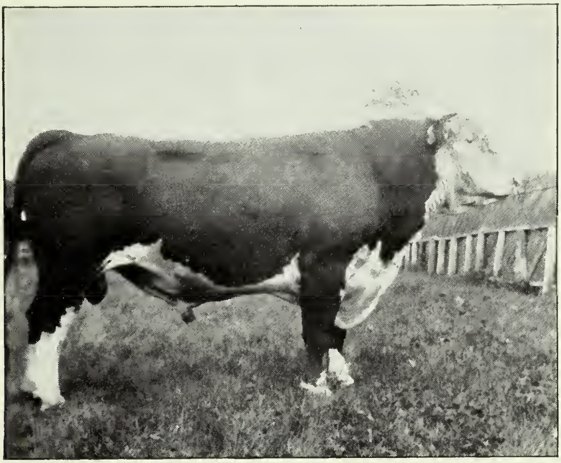

FIG. 149. HEREFORD BULL, OWNED BY COTTRELL VALLEY FARM, HOOSIC FALLS, N. Y.

Some of the advantages of the breed are: They readily adapt themselves to almost any country, and they have proved themselves eminently fitted for range conditions. In early maturing qualities, they are superior to the Shorthorns. For baby-beef production they have but one equal, and that is the Angus. They make good use of their food and lay on flesh on the parts of the frame from which the best meats are cut; but when pushed with grain, they are inclined to become "patchy," that is, to form lumps in their flesh. They winter better when calves than Shorthorns do. Their uniformity of color gives them many admirers, and they cross most excellently with Shorthorn cows. They are less subject to abortion and to milk-fever than many other breeds.

Their weak points are: They make poor cows, for it is said of some breeders who produce show animals that they always keep one Jersey cow for each Hereford, the Jersey to help raise the Hereford calf. Also, they are a little more inclined to be wild than the Shorthorns. Originally they were too heavy in the forequarter, but that has been largely corrected by proper selection. They do not cross with scrub stock nearly so well as Shorthorns; a half-breed crossed on a scrub invariably produces a scrub. This is due largely to the fact that they are a new breed; but this objection will be overcome in the course of time,— in fact it is less noticeable now than in former years.

ABERDEEN ANGUS

This breed of cattle has won more prizes at the International Fat-stock Show than any other breed. This fact has brought the breed rapidly into prominence. It is probable that the Angus cattle originally came from the northeastern counties of Scotland with Aberdeen as the center. The Aberdeen cattle of today is the result no doubt of the amalgamation of two strains of spotted cattle found in the districts of Scotland. This breed was established about 1800, but was not introduced into the United States until 1873. More cattle of this breed are found in Iowa, Illinois, Missouri, Ohio and Indiana, than elsewhere. The characteristics of the Angus cattle are very similar to those of the Hereford. They mature very early and when well-fed are fat at any age. Being hornless, they are wanted by many feeders who do not like to dehorn cattle. Their uniformity of color makes them sought for by thousands of feeders who know that a lot of cattle that have the same color throughout will always sell for a little more money than the same quality of mixed colors.

Some of the objections that the champions of the other two breeds urge against the Aberdeens are: They are very poor milkers; are naturally inclined to be wild; they do not cross as well as the Shorthorns, and they do not get heavy enough.

Though the State of New York is not now a beef-producing state and is not likely to ever become such, yet, she may justly be proud of her record in introducing into the United States two of the leading beef breeds of our country; but there is a question even yet whether or not farmers living remote from shipping points in New York State would not do as well to grow beef cattle that can be driven on foot to market rather than to haul the dairy products so far. At any rate, this subject is worthy of careful consideration.

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Circular 78

Dairy Breeds of Cattle

BY

JARED VAN WAGENEN, Jr.
Farmers' Institute Conductor

Reprint from Bulletin 50

DAIRY BREEDS OF CATTLE

Jared Van Wagenen, Jr.
Farmers' Institute Conductor

There are between fifteen and twenty different breeds of cattle recognized in America, although some of these have very few representatives and are slightly known. There are four — the Holstein-Friesian, Ayrshire, Jersey and the Guernsey that are universally recognized as special purpose dairy breeds. Then in addition to these, four other minor breeds — the Dutch Belted, the French-Canadian, the Brown Swiss and the Kerry are commonly classed as dairy cattle. The American farmers as a whole have done little in the originating of American breeds. There are two or three types of horses and three or four breeds of swine which are distinctively American, but every breed of cattle entered in the Fair Association premium lists are of European origin save only the little French-Canadian cow from Quebec. Our one American breed, the Holderness, was allowed to pass almost before it was formed — nor is it to be regretted for there is no possible excuse for a further multiplication of breeds. The following is a very brief account of the history and characteristics of our special purpose breeds of dairy cattle.

THE HOLSTEIN-FRIESIAN

The Holstein-Friesian is the black and white cow of Holland and the lower Rhine. Doubtless animals of this breed were imported to the Hudson Valley by the early Dutch settlers nearly three centuries ago. The Holland Land Company brought some over in 1795 and from time to time since, there have been importations. These early importations were from different parts of the country and so confusion of names resulted. In 1872 the first volume of the Holstein Herd Book was published and in 1880 another organization brought out the Dutch-Friesian Herd Book — thus putting two rival associations in the field. Finally in 1885 these

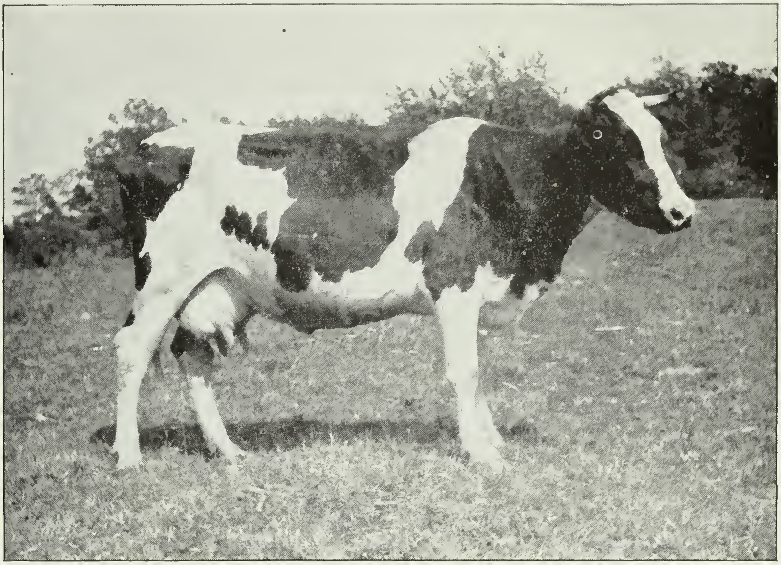

FIG. 150. HOLSTEIN COW, "ZADY BERGSINA 2D CLOTHILDE;" 99 POUNDS MILK IN ONE DAY; 639.8 POUNDS MILK, 27.59 POUNDS BUTTER IN SEVEN DAYS. OWNED BY H. H. STICKLES, CLAVERACK, N. Y.

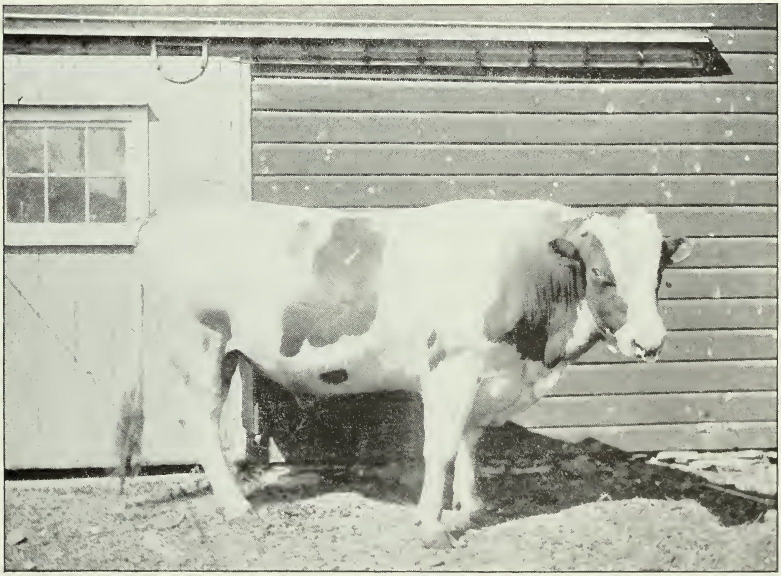

FIG. 151. HOLSTEIN BULL, "BUTTER BOY ARTIS CLOTHILDE 4TH." OWNED BY H. H. STICKLES, CLAVERACK, N. Y.

two organizations were merged into one and the name Holstein-Friesian adopted as a compromise — a rather cumbersome and meaningless name. The breed has become very widely distributed throughout the world, but especially in America.

The Holstein has some clearly marked characteristics that set her off from other breeds and for some purposes give her a place all her own. Her size is by far the largest of all the milk breeds, the mature cows if well developed frequently weighing from 1,200 to 1,300 pounds; while bulls of from 1,800 to 2,000 pounds are not uncommon. The color is always black and white but occasionally animals are very nearly pure white and conversely some are nearly black, but the black must not extend to the hoofs. The form in the best specimens is an extreme example of the milk type with angular conformation, great development of the pelvic arch, enormous udder and milk veins and an abdomen that shows wonderful digestive capacity. The head should be lean and the jaw long between the muzzle and the angle of the eye — as distinguished from the triangular shaped head of the Jersey. The withers in cows of pronounced milking tendency are sometimes very thin and sharp, and this together with the prominent hip bones sometimes gives them an appearance of coarseness. As seen in the stables of good breeders, however, they carry enough flesh to take away this impression. The rump should be long and level, and an unusual width across the hookbones is a distinctive breed characteristic. The hide has rarely the mellowness and elasticity of the Channel Island breeds. The muzzle may be dark or light or mottled with patches of both colors. The horns are usually white tipped with black and ought not to be coarse or spreading. No cow has greater feeding capacity than the Holstein and no calf has greater vigor

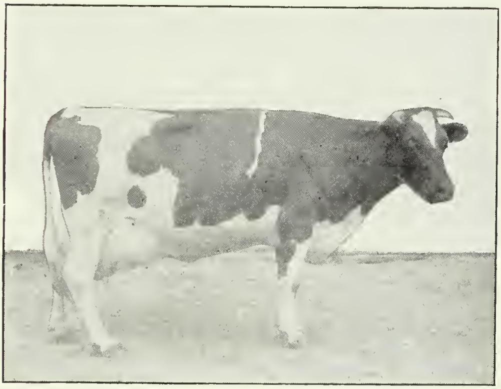

FIG. 152. HOLSTEIN COW, OWNED BY R. F. SEELEY, WATERLOO, N. Y.

or can make greater gains in body weight than the Holstein calf. Calves may weigh up to 125 pounds at birth and as veals, reach astonishing weights at four or six weeks. Mature animals while growing and fattening readily, give too large a proportion of offal to be desirable for butcher stock.

As a producer of market milk of medium grade, the Holstein cow has no rival. Unfortunately the percentage of fat is too low to suit discriminating markets, but her wonderful milk flow, her vigor and feeding capacity, together with the too general practice at shipping stations of receiving at one price all milk that will pass the state standard for fat, has made her by far the most popular cow in the great milk shipping districts. Then too, more than most other breeds, she has always been the working farmer's cow. The Guernsey, especially, and to a less extent the Jersey, has been largely in the hands of wealthy men, but the Holstein is today mainly handled by men who are keeping her strictly as a commercial proposition and she is getting an amount of skillful handling and feeding and advertising such as no other breed receives.

The Holstein-Friesian Association has a highly developed Advanced Registry record; most records, however, being made for periods of seven days or thirty days rather than a full year — a method not well calculated to determine the true dairy capabilities of a cow. Some wonderful milk and fat records have been made. The world record for seven, thirty and sixty days was recently made by Spring Farm Pontiac Lass who in seven days gave 585 pounds of milk containing 34.31 pounds of fat equivalent to 44.15 pounds of butter. Holstein records are usually spoken of as so many pounds of butter, this butter being calculated as 80 per cent. fat — an incorrect method that makes the results a little too high. There is one daily record of 127 pounds of milk; while yearly records of from 12,000 to 18,000 are not uncommon. It should be remembered that these milk records are made by large animals highly fed and skillfully cared for and that the percentage of fat is relatively low. The Holstein will always be most at home in regions of abundant food supply and deep pastures. She is admittedly at a disadvantage with the smaller breeds on scanty grazing or very hilly lands.

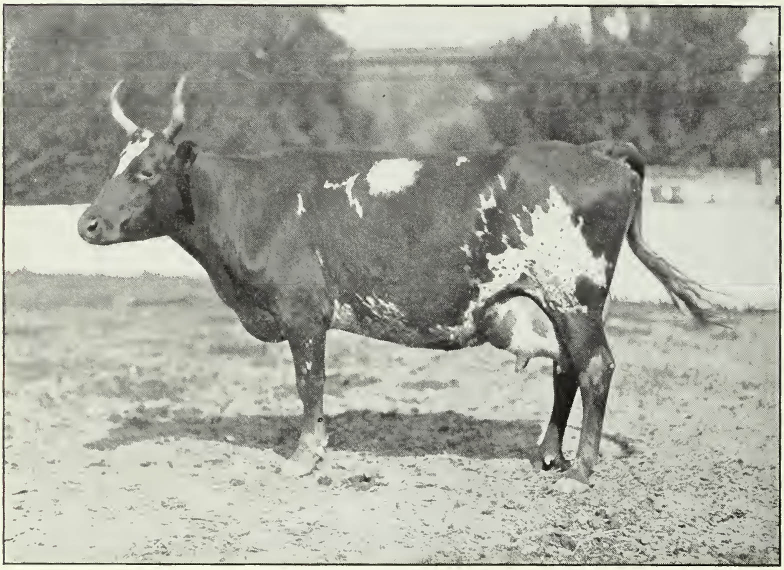

FIG. 153. AYRSHIRE COW, OWNED BY E. L. BUTTON, MELROSE, N. Y.

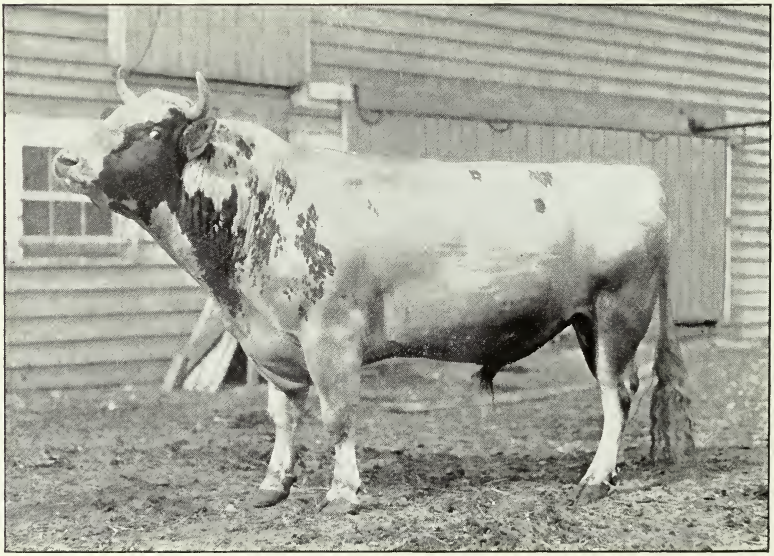

FIG. 154. AYRSHIRE BULL, OWNED BY E. L. BUTTON, MELROSE, N. Y.

THE AYRSHIRE

The original home of the Ayrshire is in the County of Ayr in Southwestern Scotland, which, by the way, was the land of Robert Burns. Ayr, with the neighboring counties, is described as a good agricultural country with much fine grazing land and with a very moist climate but not severe as compared to the northern United States.

The Ayrshire has been a well recognized breed for more than a century but there seems to be no general agreement as to the history of its formation. The foundation was surely the native cattle of that part of Scotland, and nearly one hundred and fifty years ago some specimens of the old Teeswater or early Shorthorns were brought in and mated with the native stock. There is also a tradition that some cattle from the Channel Islands — probably Jerseys — were incorporated in the breed. In fact so far as early accounts go, it would seem that there had been infusions of several English breeds as well as the cattle of Holland. But at any rate, before 1780, the County of Ayr had a distinctive breed of cattle which at that time were usually black and white and were locally famous for abundant milk yield. Later the colors became red or white and brown and white.

The first importations to America were probably made into Canada about 1800 by loyal Scotch emigrants — for the Scotchman has always loved the Ayrshire cow just as he has the Clydesdale horse. The first American Registry Association was established in Massachusetts in 1863, thus antedating the American records of other breeds. Their distribution has become almost world-wide and the Ayrshire has never lacked for ardent admirers, yet the breed has never attained a popularity or number comparable with either the Holstein or the two Channel Island breeds. They are most numerous in Canada, New England and the cheese districts of northern New York.

The Ayrshire possesses some rather marked characteristics. In size, the approved demand is for an animal approximating the weight of the Guernsey — say 1,500 pounds for the mature bull and 1,050 for the aged cow.

In conformation, the Ayrshire is normally less typical of the dairy ideal than the other three breeds. The barrel is round, the ribs well sprung, the legs short and the wedge shape is pronounced but the hind quarters are frequently too beefy to please the man accustomed to the extreme dairy type. They are said by butchers to make very satisfactory carcasses of beef, not carrying the yellow fat of the Channel Island breeds nor the coarseness and offal of the Holstein. It is not too much to say that the udders on the average are the most perfect of any breed, being very broad and symmetrical with exceptionally well placed teats and carried well up against the body both forward and behind, but the fault of two small teats is not infrequent. The Ayrshire head is most unmistakable for its proud carriage and the erect black-tipped horns which tend to turn backward. The colors are white, mottled or flecked with red or brown; the proportion of each color is irregular, animals nearly pure white or red or brown being admissible.

The Ayrshire is not typically a butter cow; her milk is higher in fat than the Holstein, but fully 1 per cent. below that of the Channel Island cattle. She has been regarded as peculiarly satisfactory in the cheese districts.

The breed has an Advanced Registry Record, and milk yields exceeding 12,000 pounds are not uncommon.

The breed has a reputation for hardiness and an ability to give profitable returns on rough upland pastures. It is said that in Scotland she is called the "Poor Man's Cow."

The Ayrshire temperament is nervous and the bulls are often said to incline to viciousness more than other breeds.

THE JERSEY

The Jersey takes her name from the island on which she was originated. The Island of Jersey lies only fourteen miles off the coast of France and has less than 29,000 acres of land, yet is said to maintain about 40,000 cattle to say nothing of growing vast amounts of trucking crops for the English markets. It is remarkable that this little group of islands have given the world two of its most widely known breeds of cattle.

Some Jersey or Alderney cows were brought to Pennsylvania as early as 1818. Beginning about 1850 they were imported in considerable numbers and the American Jersey Cattle Club — the present record organization — was founded and began its work in 1868.

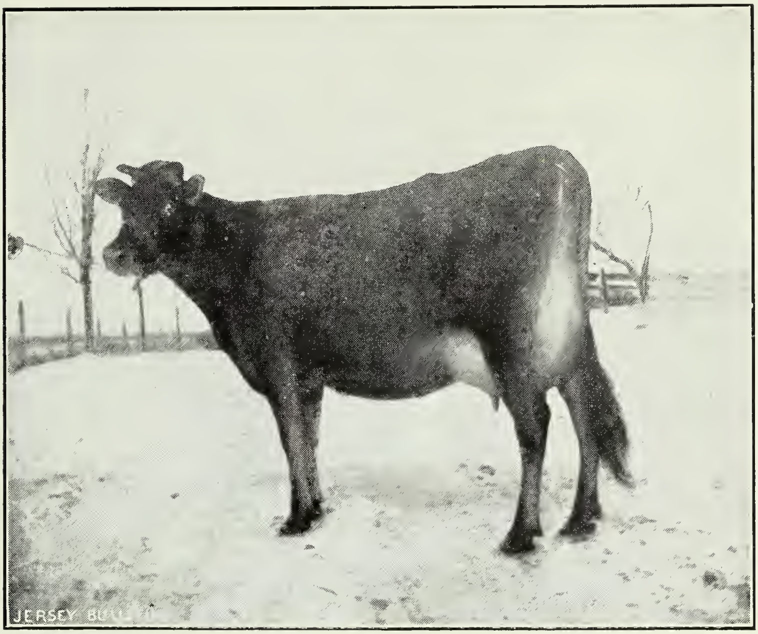

Fig. 155. Jersey Cow, "Imported Hero's Queen," 162973, A. J. C. C. Forty pounds Milk per Day; 17 Pounds, 4 Ounces Butter in Seven Days. Owned by George W. Sisson, Jr., Potsdam, N. Y.

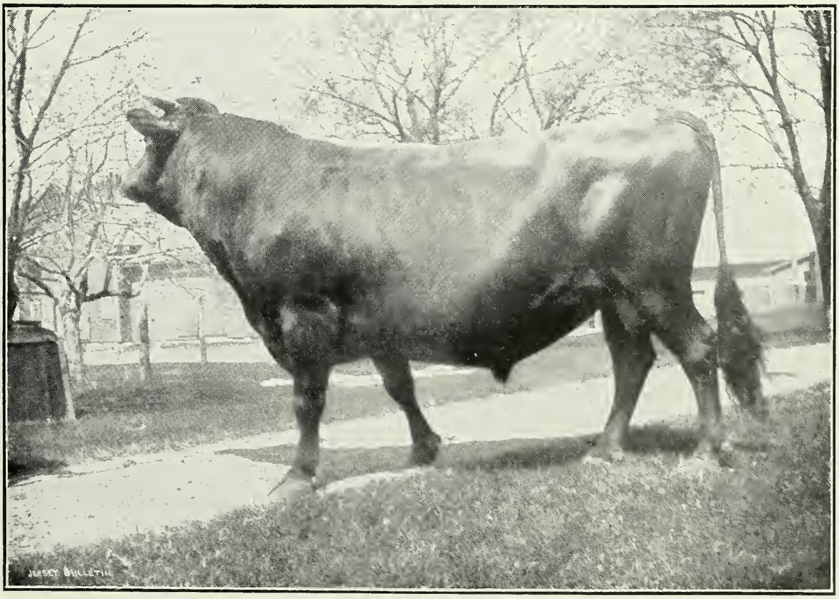

Fig. 156. Jersey Bull, "Lucy of St. Lambert's Heir," 62661, A. J. C. C. Owned by George W. Sisson, Jr., Potsdam, N. Y.

Probably it is not too much to say that considering her numbers and her almost world-wide distribution, the Jersey is the most famous and popular of all breeds of cattle. From the standpoint of the artist she is the most beautiful, and more than a hundred years ago an English traveler in Jersey urged their importation in order than they might " ornament the parks of the nobility and gentry."

She has characteristics as well that make her a strictly utility cow and that have given her a place in almost every cowkeeping country of the globe. Bred originally in a mild climate she has demonstrated her fitness to the tropics or the severe Canadian winters. There is no reason for the common idea that she lacks constitution.

Her size, especially in her island home, is the smallest of the four dairy breeds. Under American conditions she tends to become larger and to lose a little of her fawn-like beauty.

Few mature cows weigh below 700, and weights above 1,000 are uncommon. Experienced breeders prefer bulls ranging up to 1,300 and the movement is toward greater size. The color may vary through a wide range, generally known as fawn. Jerseys are never wholly white but white markings may occur. A shade is found that may be called light cream, and also a very dark brown sometimes called mulberry black. Squirrel grey, orange fawn and lemon fawn are other descriptive terms. The preferable color is solid, without definite markings, but lighest along the spine, becoming darker on the belly and legs. The tongue and switch are often black but not necessarily. Always there is a lighter colored ring of hair around the muzzle — a very persistent characteristic even in slight admixtures of Jersey blood.

The head is lean and markedly triangular in shape as compared with the Holstein. The eyes are especially prominent. The horns ought not to be coarse and in some families are very light. The chest is frequently too narrow and the ribs often lack spring. As a rule, the Jersey hide is mellow and elastic but her secretions are less markedly yellow than in the Guernsey. The milk veins are frequently splendidly developed but poor fore udders are very common.

They reach maturity probably earlier than any other breed and yet some of the oldest cows known have been Jerseys. The milk is at least as rich as that of any other breed. The Jersey has not been a satisfactory butchers' animal — largely on account of her. small size, and undue proportion of offal. The Jersey Register of Merit accepts lists for seven, fourteen, thirty days and one year. Mature cows must make at least twelve pounds of butter fat in seven days or 360 pounds of fat in one year. The highest price ever paid at public sale for Jerseys was $12,500 for a bull and $7,500 for a cow, both at T. S. Cooper's sales. These prices have been greatly exceeded at public Shorthorn sales. Up to June 1, 1913, there had been registered in the American Jersey Cattle Club, 113,300 bulls and 290,725 cows.

THE GUERNSEY

The motherland of the Guernsey cow is the little islands Guernsey and Alderney in the English channel between France and Britain. Most importations have been made from Guernsey which contains about 13,000 acres of land and maintains about 5,000 cattle — a very narrow home to be the nursery of a world-wide breed. The soil is fertile and the climate very mild and uniform. They have been bred in essential purity for many years and for a long time — centuries it is said — have been protected against infusion of other blood by a law prohibiting the importation of foreign cattle except for slaughter.

It is believed that Richard Harrison of Germantown near Philadelphia imported a pair of cattle from Alderney as early as 1818 and other occasional importations were made, especially after 1865. The date of the establishment of the American Pedigree Registry Record is 1879, and up to June 25, 1913, there had been registered in America 45,339 cows and 25,422 bulls, but popular interest in the breed was of slow growth until after the very favorable record made in the breed test at the Pan-American Exposition in 1901.

In characteristics the Guernsey is most naturally compared with the Jersey although the differences between the two breeds are marked. The Guernseys are coarser and heavier in build, weights of 1,500 pounds for mature bulls and 1,050 for aged

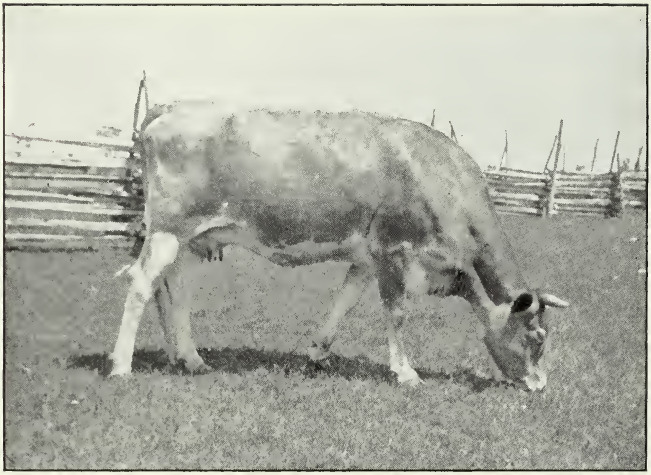

FIG. 157. IMPORTED GUERNSEY COW, OWNED BY A. R. EASTMAN, WATERVILLE, N. Y.

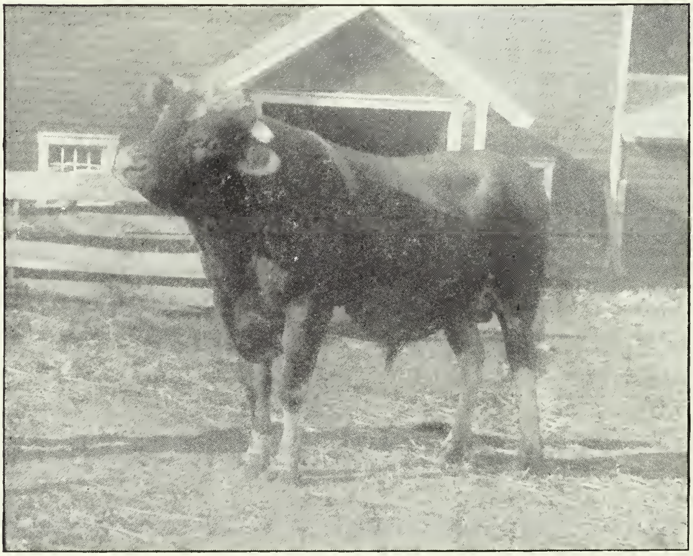

FIG. 158. GUERNSEY BULL, OWNED BY JARED VAN WAGENEN, JR., LAWYERSVILLE, N. Y.

cows being score card standards. In heifers before freshening there is often a suggestion of beefiness especially in the thick withers. A tendency toward a sway back and sloping rump is too common. The color may vary through a wide range of yellow or reddish or brownish fawn either solid or more usually with white markings, sometimes very abundant especially on the under part of the body and legs. Occasionally animals are nearly white.

The color of the muzzle is a fancy point much emphasized by some breeders. It is preferably a yellow buff or flesh color but dark flecks or even black does not indicate impurity of blood or lack of dairy character. The most marked characteristic of the Guernseys is the rich yellow hue of her milk and of the secretions as seen around the eyes, inside the ears and in the very yellow color of the dandruff on the udder and scrotum and at the end of the tail.

The horns are typically yellow at the base and rather short and incurved, and the hoofs amber colored, although many individuals of undoubted pure breeding fail to show these characteristics well developed.

The hide is usually particularly mellow and elastic — on the average excelling all other breeds in this regard.

The temperament of bulls and cows alike is exceptionally mild and gentle — the heritage of centuries of family care and confinement by tethering to very narrow limits.

The strong point of the Guernsey is the production of milk and cream for discriminating markets where the natural high color will enable it to sell at prices in advances of milk lacking this character. Guernsey milk is to be classed as high in fat percentage, being about the same as the Jersey in this regard.

At the beginning of 1912 there were about 257 Guernsey cows with official records exceeding 10,000 pounds of milk and 213 making 500 or more pounds — say 585 pounds of butter fat in a year. There is one official milk record exceeding 18,000 pounds. The requirements for Advanced Registry among Guernseys is that a heifer must produce not less than 250 pounds of fat in a year if calving at two years old or 3,600 pounds of fat in twelve months if a mature cow.

The top price ever paid for a Guernsey at public sale is $3,200 for a bull and $2,600 for a cow — not particularly high as compared with record prices for either Holsteins or Jerseys. On the other hand, the average level of prices at present is probably above any other breed. Grade Guernseys are also wanted at prices substantially higher than other breeds.

THE MINOR DAIRY BREEDS

There remain four other breeds of cattle which, while not widely known, are generally classed as special dairy breeds and hence should be briefly mentioned here.

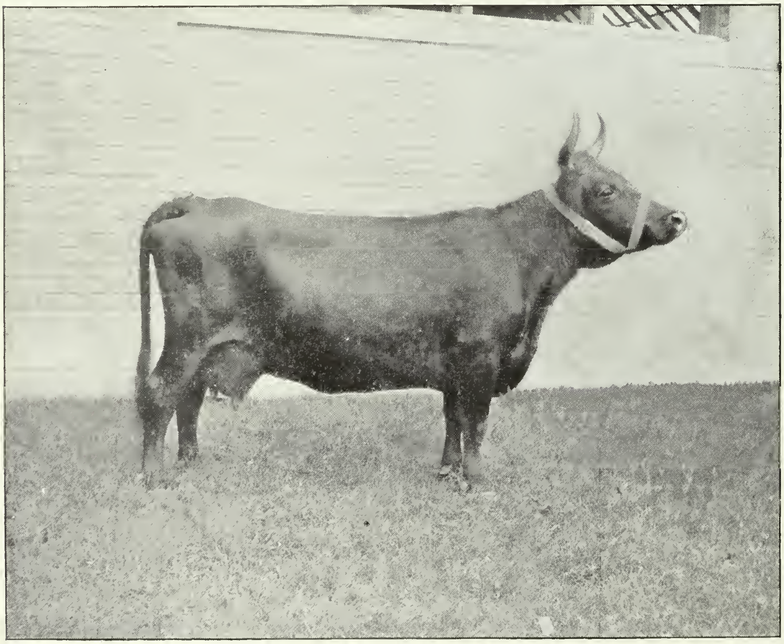

FIG. 159. KERRY COW

The Kerry is the little cow from western Ireland, developed there by poverty-stricken tenant farmers, and is a most interesting example of how long years of scanty feed and hard conditions have resulted in a dwarf race of cattle. Red Rose, a celebrated prizewinner of the breed, was only 34 inches high at the withers and weighed about 400 pounds. She was unusually small, however, as cows commonly weigh from 500 to 600 pounds, while mature bulls range from 800 to 1,000. In spite of their diminutive size they are regarded as of true milk type, and Red Rose is claimed by her owners to have made the astonishing record of ten thousand pounds of milk in a year. The color is generally black — sometimes red, and there may be a little white on the scrotum or udder. The head is lean with white horns tipped with black and the conformation is low with fine bones. The Kerry is at least interesting as an example of an animal moulded by environment.

THE DUTCH BELTED

The Dutch Belted originated in Holland where they are said to have been known for more than 200 years. Specimens of the breed were imported to America as early as 1838, but they have never attained any wide distribution or popularity. It has been the misfortune of the breed to have a color marking so striking and unusual that all other characters have been lost sight of in the perpetuation of this feature.

The size of the Dutch Belted is smaller than the Holstein, being comparable to the Guernsey or Ayrshire. They are black with the one distinguishing and peculiar character of a white belt which may be only a foot wide or may be a broad blanket encircling the body. The belt should be as uniform as possible in width with a clean-cut line of demarkation between the two colors. The belt is a very firmly fixed character and is usually transmitted to the grades. There does not seem to be available many records of production that would justify any high estimate of the breed for dairy purposes.

THE FRENCH CANADIAN

The French Canadian has the unique distinction of being the only recognized breed of American origin, having been developed by the habitants of Quebec Province, Canada. It is believed that they are descended from cattle from France brought to Canada previous to the English occupancy. Like the Kerry they are the product of rather poor agricultural conditions. This has given them hardiness and the ability to make good use of pasture and rough feed. The conformation and sometimes the color is suggestive of the Jersey to whom they are probably related through a common French ancestry. The color may be black or dark fawn or brindle with the ring of lighter color around the muzzle characteristic of Channel Island cattle. In size they are rather dwarfish, averaging smaller than the Jerseys, but they possess a certain angularity of form denoting the milking type and such records as are available indicate that many individuals have dairy ability of a high order. They are widely distributed in lower Canada and there are a few herds scattered in the northern states.

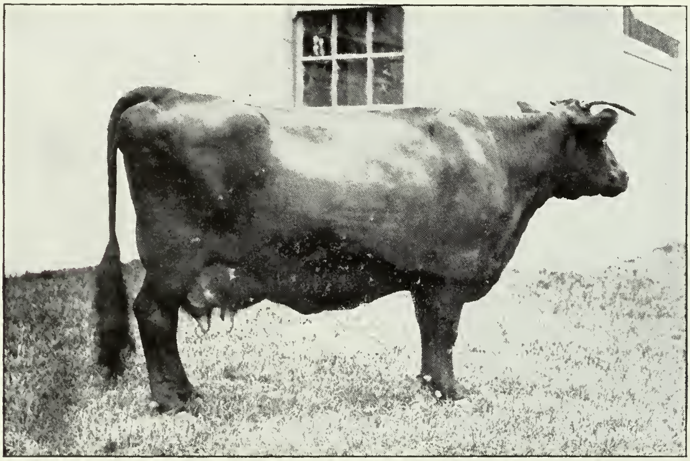

FIG. 160. FRENCH CANADIAN COW, OWNED BY WILLARD FRALICK, MARATHON, N. Y.

THE BROWN SWISS

The Brown Swiss has formerly been classed as a general purpose breed, but recently the Brown Swiss Breeders Association has declared that they were to be deemed a special purpose dairy breed.

Their native home is in the mountain valleys of the Alps where they have been carefully bred for many generations.

As a breed they have some rather distinctive characteristics. The size is above medium; the color is a shade of brown which in some cases may be described as mouse color — it is commonly lighter along the back and under the belly. The muzzle has the mealy ring suggestive of the Jersey. The udder is often white, while the hoofs are black and the horns white with black tips.

It must be said that the conformation of the Brown Swiss does not agree with the usual ideal of the dairy type. The body is notably blocky — not to say beefy. The neck is short and thick with heavy throat latch and dew lap. The legs are short, and the whole appearance is suggestive of vigor and strength.

As might be expected from their home environment, the breed is renowned for hardiness and vitality, and also bears an excellent reputation for docility.

So far as dairy performance is concerned, the number of records are not large, but there are some individuals of marked dairy ability.

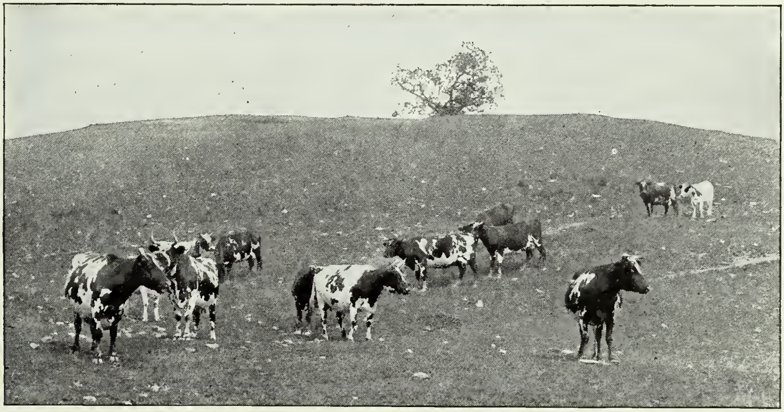

FIG. 161. AYRSHIRE CATTLE ON FARM OF E. L. BUTTON, MELROSE, N. Y.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 79

UNIVERSITY OF ILLINOIS
AUG 21 1915

Horses

BY

JAY GELDER

Superintendent, Adirondack Stock Farm, Glens Falls, N. Y.

Reprint from Bulletin 50

HORSES

Jay Gelder

Superintendent, Adirondack Stock Farm, Glens Falls, N. Y.

THE PERCHERON

The Percheron, in point of numbers, date of introduction in the United States and popularity, stands first among the draft breeds in this country. When first introduced to the United States all of the draft breeds of France were included under the name of the Norman horse and later under the name of Percheron and for years, Beuloomais, Bretonnais, Ardennais and Nivernais were all imported under these names and sold as one breed.

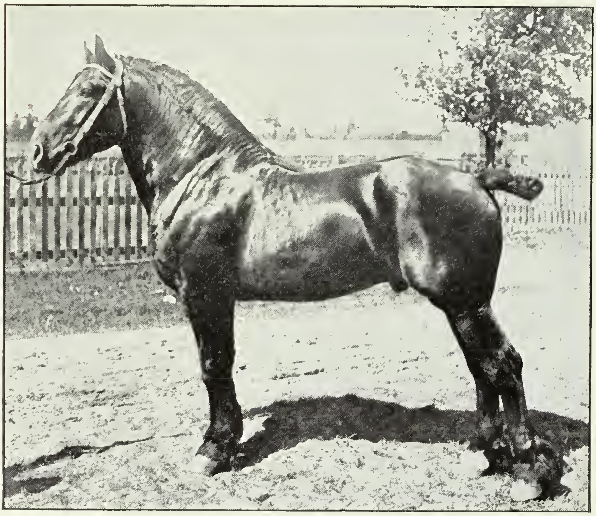

Fig. 162. Imported Percheron Stallion "Kriquet," 91433. Three Years Old: Weight, 1,820 Pounds. Owned by Adirondack Farms, Glens Falls, N. Y.

Later on the Percheron stud book in France was organized and the registration of Percheron horses was confined to those bred in the La Perche district. The first Percherons were imported into New Jersey in 1839 and from this early importation they have become the best known and have done more to benefit and enrich the farmers of the United States than all of the other draft breeds combined. In 1912 there were 3,292 of the various draft breeds imported and of this number probably three-fourths were Percherons.

The origin of the Percheron horse is conceded to be the large, coarse mares of Flanders crossed with the Arabian stallions, which produced the rugged, gray, active, small draft animals used so largely for the quick movement of heavy loads. The American trade called for darker colors with more size and bone. The French breeders were quick to respond to this demand and unlike their English or Scotch brothers were quite willing to cooperate with the backers of their breed in America in furnishing the type of horse required.

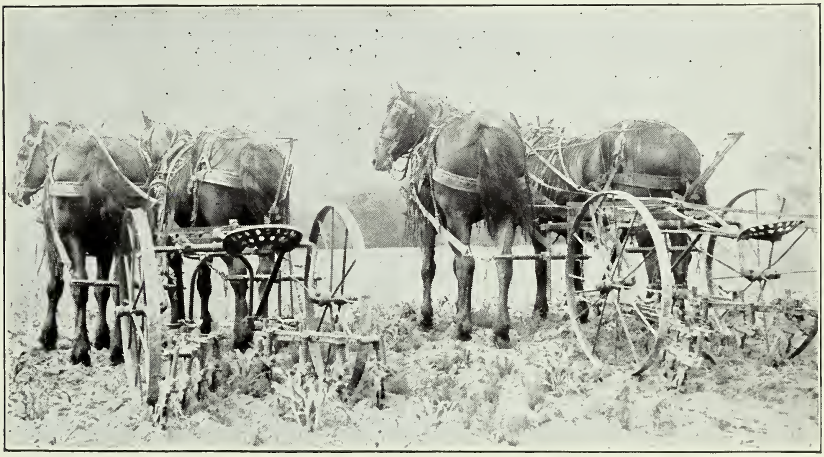

FIG. 163. FOUR BLACK IMPORTED PERCHERON MARES; AVERAGE WEIGHT 1,800 POUNDS. OWNED BY ADIRONDACK FARMS, GLENS FALLS, N. Y.

Unlike the Belgian breeder the Frenchmen are quite willing to sell any or all of their prize animals at a price, and it is remarkable that the Percheron horse has not sadly degenerated with the enormous drain of so large a number of their best animals each year. But the breed has been greatly benefited and helped by the French government in buying and furnishing for breeding purposes, a large number of good stallions at a nominal service fee, also by the approval and subsidy of the best stallions owned by individuals and the liberal amounts awarded in prizes at the big shows.

The principal faults of the Percheron are his light bone, his short pasterns and steep rump. By careful breeding the faults have been largely corrected. Compared with the Shire and Belgian, the Percheron have less bone, but more than the Suffolk and Clydesdale. Good individuals have clean flat cordy legs that give them great wearing quality.

The success of the Percheron in this country has been secured by their stylish, upstanding type and prompt cheerful action, together with the fact that the Percheron grades wear better, sell better and fill the bill better than those of any other breed. This breed has been fortunate now as well as in the past in having among its supporters many of the most noted horsemen in America and thousands of dollars are being collected and spent by the American Percheron Breeders' Association each year in prizes and advertising the good qualities of this breed.

THE BELGIAN

Without doubt, the large, black Flanders horse was a strong factor in the foundation of most of the other draft breeds, and to the difference in taste, requirements and environment can be attributed the variation in type and characteristics of most of the recognized draft breeds of today. Flanders being a part of Belgium and Holland, the Belgian breeders claim they have the oldest draft breed in the world.

Until recent years the many faults of the Belgian horse prevented them from becoming popular with the American breeders. The coarse, square, sour head, lop ears, short, thick neck, low back, short round hips, and crooked coarse hocks, were the rule rather than the exception.

To the most liberal policy of prizes and subsidy and careful inspection by the Belgian government is due the wonderful improvement of the Belgian horse during the past ten years. As high as $1,200 subsidy is paid to champion and prize winning stallions, but these stallions must be kept in service for five years before the owners are allowed to draw this money. This together with the high service fee ($100 by the season) commanded by the prize stallions make it impossible for outside buyers to secure a popular prize winning Belgian stallion at any price. Nearly all railroads

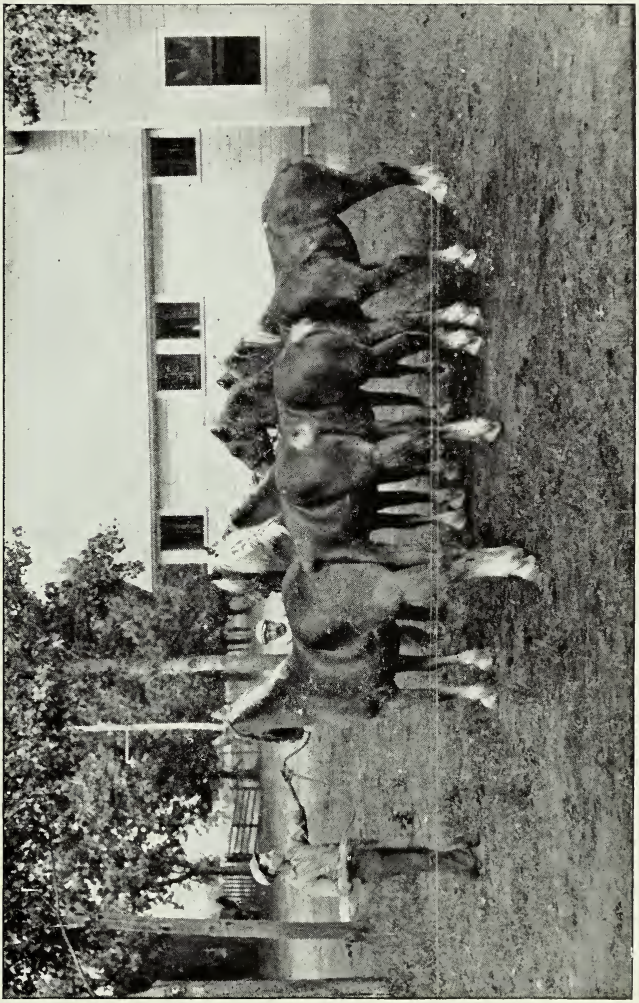

Fig. 164. Two-year-old Belgian Fillies. Imported and Owned by Adirondack Farms, Glens Falls, N. Y.

in Belgium are owned by the Government and mares may be shipped for breeding at one-half the regular rates.

The great improvement in this breed together with their heavy bone, short legs, great, wide deep bodies, bold, free action have made them the ideal horse for moving heavy loads or to cross on the common unclassified mares of this country. High-grade Belgians or a cross of Belgians on grade Percheron mares have produced some of the highest quality of draft market geldings in the world.

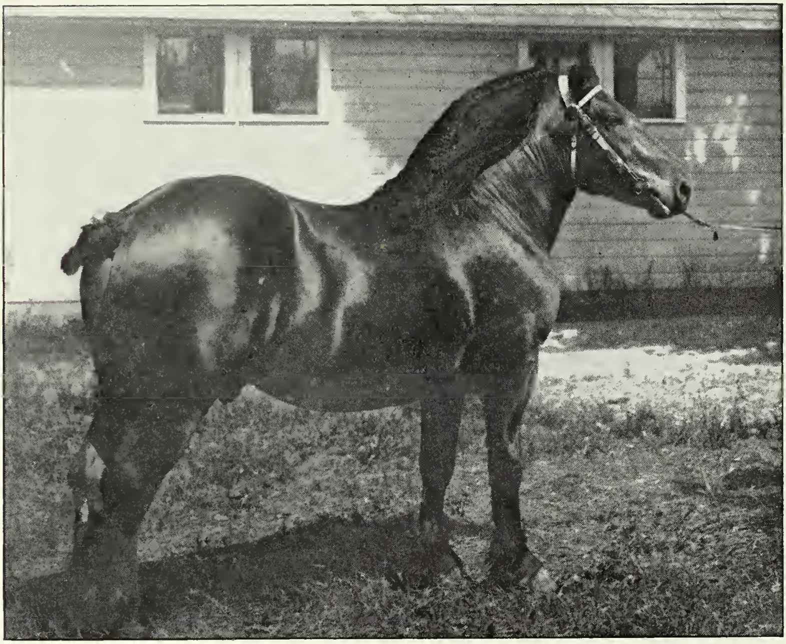

FIG. 165. IMPORTED BELGIAN STALLION "POLTRON," 6628. THREE YEARS OLD; WEIGHT 1,900 POUNDS. OWNED BY ADIRONDACK FARMS, GLENS FALLS, N. Y.

Although the prices of the good Belgian stallions and mares have advanced sharply abroad, they are being imported in greatly increased numbers. American buyers are handicapped in securing some of the exceptionally good animals by the German and Holland buyers, who are willing to pay almost any price for either stallions or mares of the highest quality.

The Belgian horse is a remarkably good feeder and shipper and acclimates rapidly, and is an example of what can be done intelligently by breeding and liberal feeding especially on green foods, in the stables as well as in the rich low pastures.

In colors the chestnut and roans are especially desirable, but color in this breed is not a strong factor, there being many good bays and browns with some blacks and grays. Until recently the scarcity and high prices of Belgian mares have prevented their importation to any great extent, but the strong growing demand in the United States for Belgian breeding stock, without the booming by wealthy breeders or registry companies, has made the call for mares so insistent that importers are bringing them over in increasing numbers, and at higher prices than are paid for any other draft animals abroad.

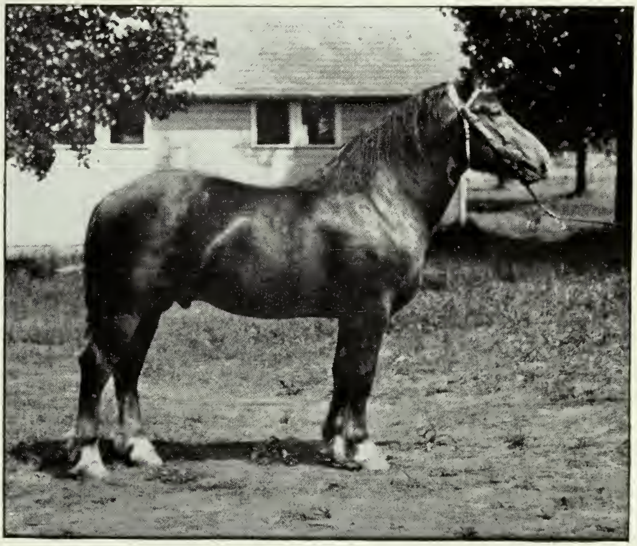

FIG. 166. IMPORTED SUFFOLK PUNCH STALLION "RENDLESHAM DAUPHIN," 3850. THREE YEARS OLD; WEIGHT 1,800 POUNDS. OWNED BY ADIRONDACK FARMS, GLENS FALLS, N. Y.

THE SUFFOLK

Originating in Suffolk County but bred also in a few of the other eastern counties of England; being the third English draft breed but so radically different from the Clydesdale or English Shire, it is a wonder they can be produced in the same country. It is one of the oldest of all the draft breeds, bred and handled by a few enthusiastic breeders; not quite as large as the Percheron, a little lighter and cleaner in bone. No animals are allowed to be recorded in the Suffolk Stud Book but chestnuts, a fact referred to with much pride by the English breeders. However, all shades are popular from golden sorrel to dark chestnut, with very little white markings. This color is a very strong feature of this breed and is readily transmitted to the grades when crossed on our common mares.

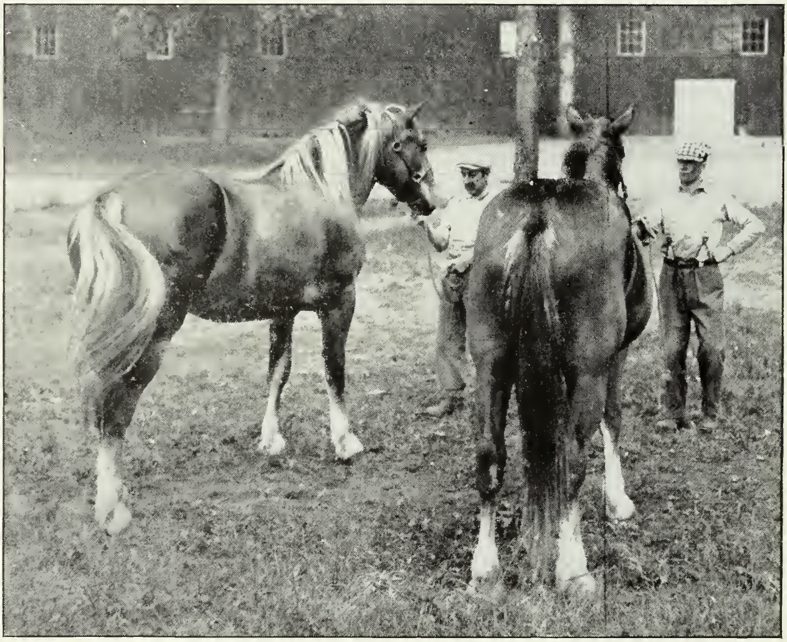

FIG. 167. TWO-YEAR-OLD IMPORTED SUFFOLK FILLIES. OWNED BY ADIRONDACK FARMS, GLENS FALLS, N. Y.

It is remarkable that a breed so small in number and bred in a district only a few miles in extent, could have been perfected and kept pure and distinct and withstood drain year after year from Russia, Austria, Australia and Canada, as well as the United States. In spite of some undesirable features this breed has made many friends and are admired by all lovers of draft horses in all countries. The small numbers and consequent high prices together with the color, which has not been a popular one among draft horse breeders generally in this country, are the only restrictions to the rapidly growing popularity of this breed.

The undesirable features of the old time Suffolk was the long, low back, crooked hock, light bone, flat feet and lack of action. These features are being largely eliminated or remedied and today it is possible to get Suffolks as fine in quality and conformation as any found in draft breeds.

The good qualities of the Suffolk are their very uniform get, their great endurance and wonderful tractability and good disposition. They mature very early and are probably the easiest keepers of any of the heavy breeds, and are sure to become very popular with the small breeder and ordinary farmer, as they make an ideal farm horse rather than a heavy draft horse for the city markets.

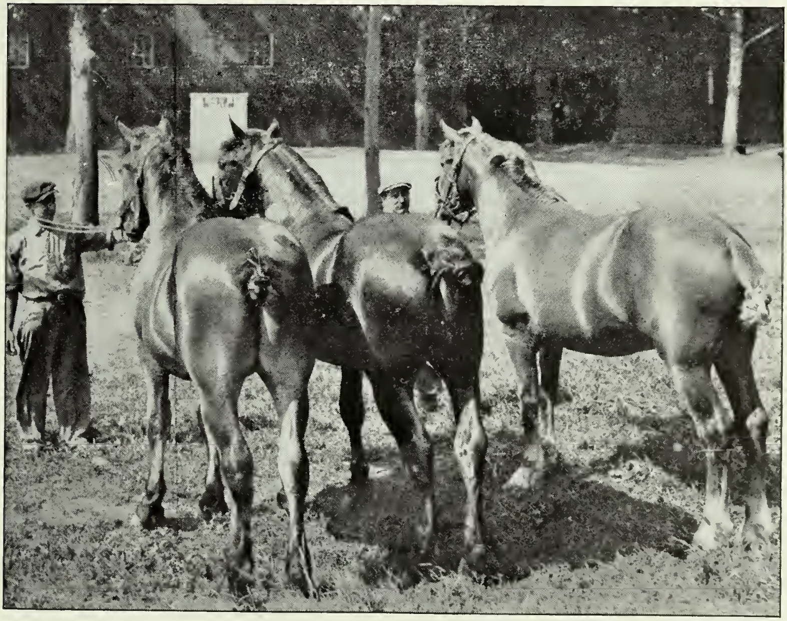

FIG. 168. BELGIAN, PERCHERON AND SUFFOLK YEARLING STUD COLTS. OWNED BY ADIRONDACK FARMS, GLENS FALLS, N. Y.

THE CLYDESDALE

A breed whose popularity in the United States today has been sadly diminished by the Scottish breeders' obstinate refusal to cooperate with or consider the wants or requirements of the American trade.

Twenty-five years ago the Scottish drafter was the most numerous of the heavy breeds in our show rings, but the fact that the American and Scotch trade require horses of a different stamp, together with the fact that Clydesdale breeders in the United States and Canada have beaten the Scotchman at his own game, has reduced the number of Clydesdales imported to this country to its present small proportions.

An insistent and increasing demand in America for a more rugged horse, heavier boned, with less feather and less white markings has given the French and Belgian breeders many millions of dollars, as a reward for their efforts and willingness to cooperate with the supporters of these breeds in this country. To the old Flemish or Belgian horse the best Clydesdales of today as well as most of the other draft breeds trace their origin. The history of this breed shows that to the black Flemish blood introduced in Scotland some 160 years ago, can be traced the improvement of the Clydesdale.

The faults of the Clydesdale are the lack of size, weight and ruggedness; and to this we may attribute the fact that the Clydesdale gelding hold their place in the city markets only when of the very highest quality.

A draft breed, light in top, lacing in neck, light boned, and generously splashed with white, have and will continue to eliminate the Clydesdale horse from the consideration of many practical American importers or breeders, except a few wealthy men who can afford and prefer to breed, show, and make a specialty of a class of horses that are not numerous or popular.

The good qualities of the Clydesdale are their level top, round barrel, clean flat bone, well set posterns, with action at a walk and trot that it would be hard to fault. The Clydesdale is still the preeminent drafter in Canada, but from recent inroads made by the importation and sale of other European draft breeds, it needs no prophet to forecast the decline of the Clydesdale popularity across the border.

THE FRENCH COACHER

For some three hundred years, the French Government has maintained a national stud and directed and encouraged the breeding of the light horse as a source of supply of remounts for the army.

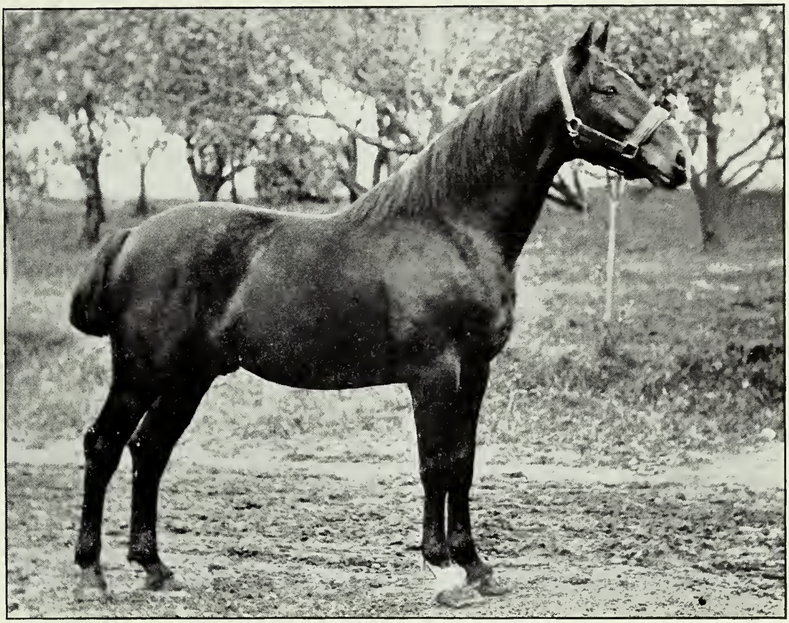

FIG. 169. FRENCH COACH STALLION

In originating this breed native French mares were mated with thoroughbred stallions, and the progeny were called "*demi sang*" meaning half breed. This name could not be used successfully in America with this breed and it was changed to French Coach.

From 1885 to 1895, the French Coacher was very popular with American breeders and at all of the principal fairs in the United States they were a great attraction and much admired.

In originating the "*demi sang*" or French Coach the French government early recognized that the ideal horse for the army also for saddle or driving purposes would be a horse of substance, quality and great endurance, and this breed has been developed and perfected as a long distance horse by the liberal prizes offered at the many government races during the past century. The trotting branch of this breed are required to go from a mile and a fourth to over three miles, from a standing start under the saddle, over uneven sod tracks, and the time they make under these conditions, handled and ridden by the unskilled French trainers, shows that the thoroughbred blood which is being used freely at the present time has given them greater staying qualities than is found in any other breed.

The French Coacher, after a long and faithful trial in America, did not produce the results expected. This was not entirely the fault of the breed, as they were crossed with every kind of mares from mustang to English Shire, and the colts produced were as uneven as the dams, and in many cases of less value. But when the stallions were mated with trotting bred and other light bred mares, the colts in many instances were of high quality and stood well to the front in the show rings, and for gentleman drivers.

The auto and the demand for more rugged farm stock is responsible for the decline of the French Coach horse, as well as all driving horses. It is to be regretted that a breed having the size, quality, finish, style, high action, speed and endurance of these horses are not still bred even in limited numbers in this country.

There were none imported from France in 1912, even though prices were lower than in former years. This government does not allow the French Coacher to come in free of duty now, as the recent crossing with the thoroughbred prevents them to be classed as a pure breed.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

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AUG 21 1915

Circular 80

Sheep in New York State

BY

EDWARD VAN ALSTYNE
Director of Farmers' Institutes

Reprint from Bulletin 50

SHEEP IN NEW YORK STATE

Edward van Alstyne
Director of Farmers' Institutes

Sheep are again attracting attention. For this there are several reasons. In many sections farm labor is scarce, particularly such as can be trusted to milk cows. The more expensive buildings needed to meet the modern requirements for milk production and the conditions necessary to produce dairy products meeting the demands of the handlers and consumers, all contribute to the cost of the products,— often beyond the price received for them. The large amount of high-priced feed to be purchased tends to make the margin of profit too small. These things are causing many to go out of dairying. Having farms adapted to stock and appreciating their advantage, such naturally turn to sheep. These require less labor and many times no other feed than that which can be produced on the farm. Men are learning that it is not gross amounts of sales which count, but the net remaining after expenses are paid.

Beef is scarce and high and must continue to be relatively so. This increases the demand and price of mutton. For a number of years wool has been, and doubtless will be, a by-product. With the right kind of sheep intelligently handled enough can be realized for the carcass to insure a profit, so that a few cents more or less per pound for wool, due to tariff changes or fashion in clothing, is no longer a vital matter.

DIFFICULTIES

The man who at the outset looks for the drawbacks in his business is the one most sure to succeed. There have been and still are many such in the sheep business. The first and most emphasized — but by no means so great as to cause it to stand at the head of the list — is the destruction of sheep by dogs. This is serious as the writer can testify, having been a sufferer on more than one occasion — once losing over sixty in a single raid. A large bell on every twelfth sheep in a large flock, and a greater proportion of

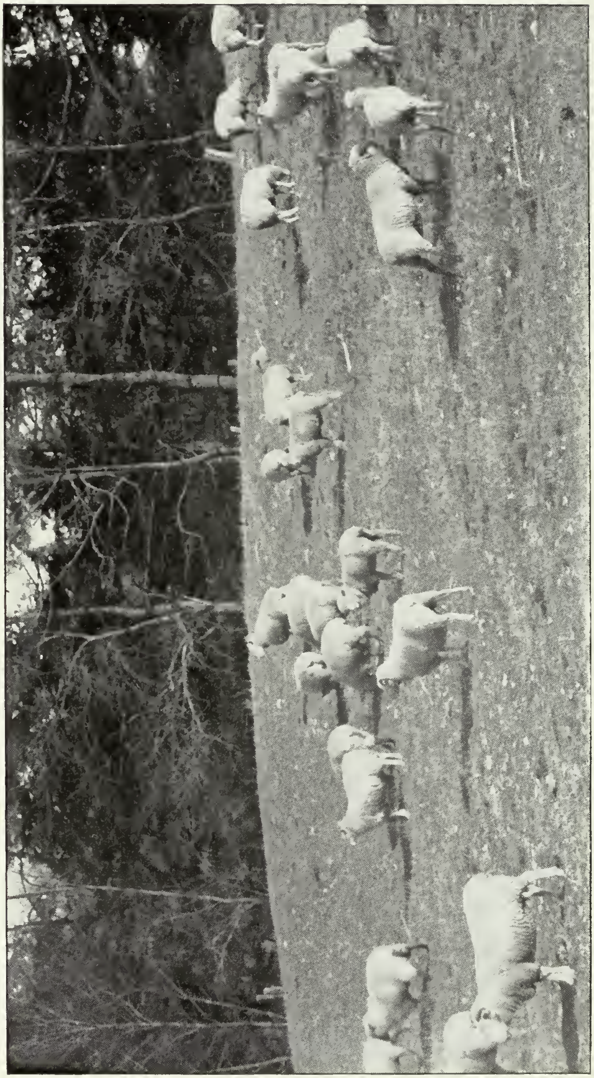

FIG. 170. FLOCK OF HOTHOUSE LAMBS

them in smaller ones is of benefit. Dogs will chase sheep so belled, but they are not so likely to. The chief value of the bells is that they give the alarm, and the sheep can be saved. Often the dog is caught in the act — a great source of satisfaction to the catcher. Such bells can be heard a mile when the wind is in the right direction.

Laws compelling the registration and tagging of dogs are of material benefit. Such are in existence in some counties. Any board of supervisors in New York State has power to enact such a law. This reduces the number of dogs, particularly those most likely to run at large, and also identifies them. Better than either of the above, is a woven wire fence four feet high with posts not farther than twelve feet apart, the wire close to the ground and a barbed wire on top. This will keep the sheep in and the dogs out, and is the most economical fence to build.

INJURIOUS PARASITES AND DISEASES

While the loss is not so apparent, unquestionably that from internal parasites and disease has been much greater than from dogs. Many have given up their flocks on this account. Most of such parasites can be easily controlled by feeding tobacco. This should be placed with the salt in proportion to one quart of tobacco to three of salt and kept before them continually both winter and summer. The stems are best run through a feed cutter, but the dust will answer the same purpose, or the cheaper grades of smoking tobacco. I have met several farmers who raise a small piece of tobacco for this purpose. Sheep do not care for it at first, but — like men — after they acquire the habit, they become very fond of it and pick it out from the salt.

Much has been said about "grub in the head." Doubtless, well-matured sheep with plenty of grub in the stomach will suffer little from this trouble. There is no danger of the grubs going to the brain. They are in the sinuses of the nose and will crawl out in due time, later turning into a fly which will lay eggs for more grubs and cause the sheep much annoyance. If sheep can lie in cool, shady places they will have less trouble from this pest. A pole smeared with tar, against which they must rub the nose when eating salt, will prevent the entrance of the fly into the nostril.

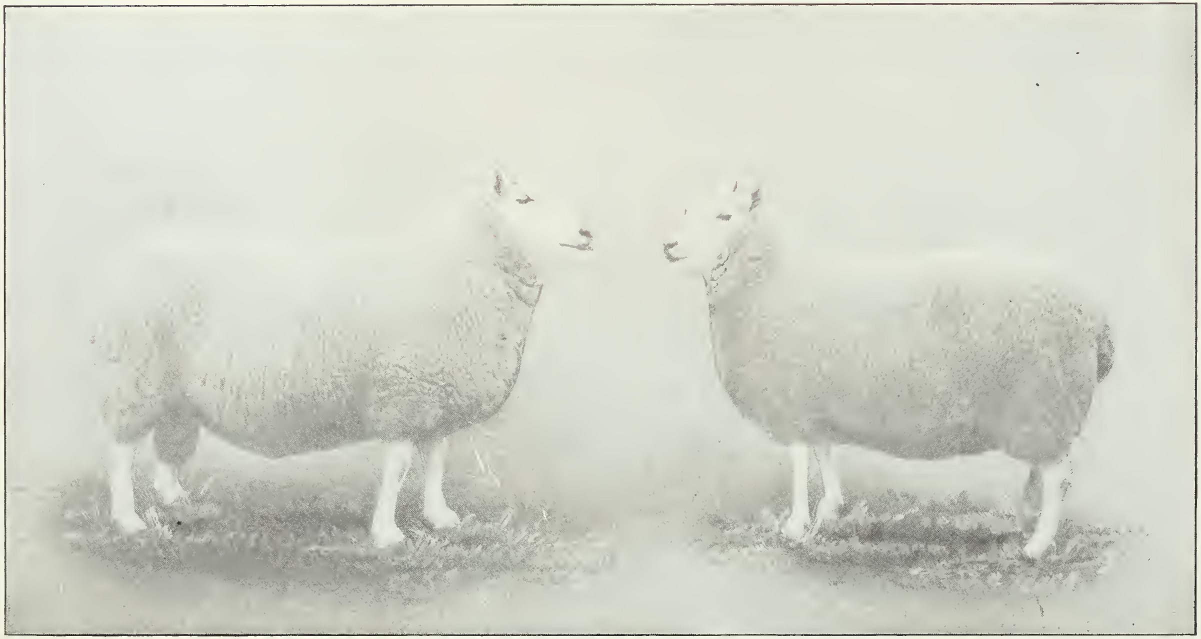

FIG. 171. CHAMPION CHEVIOT RAM AND EWE (TWINS) AT NEW YORK AND VERMONT STATE FAIRS. BRED AND OWNED BY J. A. CURRY, HARTWICK, N. Y.

The scab and external parasites, such as ticks, are no longer serious, because they can be easily controlled by the carbolic dips. With the first named, it is better to shear the sheep and immerse them in the dip, rubbing the affected parts with a corn-cob in order that it may penetrate beneath the skin and reach the minute insect which burrows there. If the weather is very cold, a blanket can be cheaply made of bran sacks. If the ticks are troublesome in mid-winter, place the sheep carefully on its back, open the wool along its neck and abdomen, then pour in the dip blood-warm, letting it work through the wool along the skin. If the dip is poured from the back down, it will follow the fiber of the wool and little of it reach the pests. After the sheep are shorn, the lambs should always be dipped. Attention to this will largely do away with ticks.

Foot rock is more troublesome with fine wools, but may be serious with sheep of the coarser wools. The feet should be examined before the sheep are turned to pasture and any surplus growth pared off. Wet yards and swampy pastures are favorable breeding grounds for this disease. When animals are affected, they will spread the disease to sound sheep. At first appearance, turpentine may effect a cure, but after the disease has become seated, there is nothing better than a saturated solution of sulphate of copper — blue vitriol — three pounds to one gallon of water. The feet should be cut so that the solution will reach the seat of the disease. Then compel the sheep to stand in a tub of the solution for not less than five minutes. Heroic, persistent treatment at the outset will be worth more than to simply bathe the affected parts.

The above are the most common troubles and may be handled with comparative ease. There are some more serious diseases such as "nodular disease" and "liverfluke," which require treatment from the most skilled veterinarians. Fortunately, they are not common in this country. When death occurs from disease, a post-mortem should always be made in order to treat intelligently others similarly affected. If one starts with a healthy flock and gives intelligent care and feed, his loss from disease and parasites will be slight. Carbolic dips and tobacco should always be on hand. As a matter of fact, the most serious losses come from insufficient or improper feed and exposure.

We cannot expect to be successful with the open wool, English breeds which for generations have been developed by an abundance of the most nutritious feed with least exposure, unless an abundance of proper food is supplied and they have shelter. Such sheep are not adapted to pick a living from barren hillsides, or to be sent forth as cleaners-up of new land. Neither will they stand wet weather. A sheep's skin is very thin, and if the fleece becomes saturated in the fall when there is little heat and sunshine, it must dry from the heat of the body, not only exhausting vitality but producing pneumonia and kindred troubles. It will pay to shelter such sheep from the fall rains as well as from the winter storms.

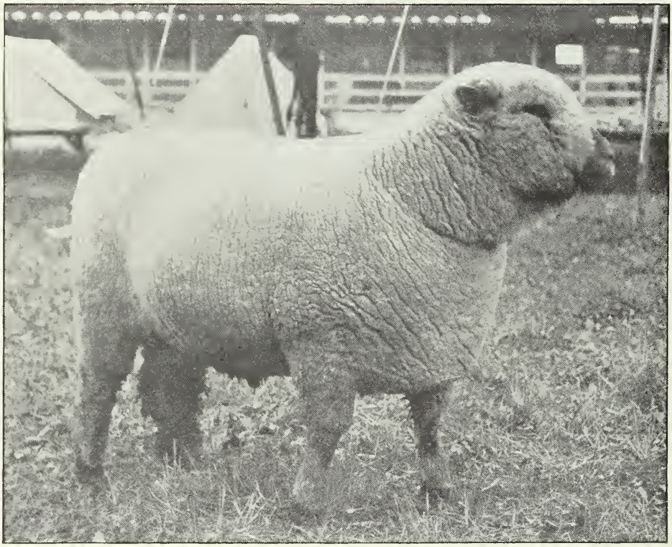

FIG. 172. PRIZE WINNING SHROPSHIRE RAM AT NEW YORK STATE FAIR, 1910. OWNED BY M. D. BECKLEY, HARTWICK, N. Y.

BREEDS

One of the questions most frequently asked is, "Which is the best breed?" There is no best breed. All have some peculiar points of excellence, which makes them of value for some particular purpose. Very briefly I will call attention to some of the characteristics of the leading breeds. All of them, except the Merino and Tunis, come from Great Britain.

The Downs

The " Downs " are most numerous. These embrace the Southdown, Shropshire, Hampshire, Oxford and Suffolk. In this country the first-named were for years the most numerous and popular. Than these, there are no more perfectly formed sheep in existence. They have great fecundity, and the lambs mature early with fine quarters. They will not shear as much as some of their cousins among the " Downs," neither are they quite as large.

Perhaps the most popular as well as numerous among this class to-day are the Shropshire. They originated farther north in England and are the result of intermingling of several bloods with the native sheep, notably, Leicester, Cotswold and Southdown. Careful selection for more than a half century has produced the beautiful sheep of today. Mature ewes average from 125 to 175 pounds, rams from 175 to 250 pounds. They are nearly as prolific as the Southdowns, better shearers and their lambs develop as rapidly. Often the ewes are allowed to become too fat to breed well.

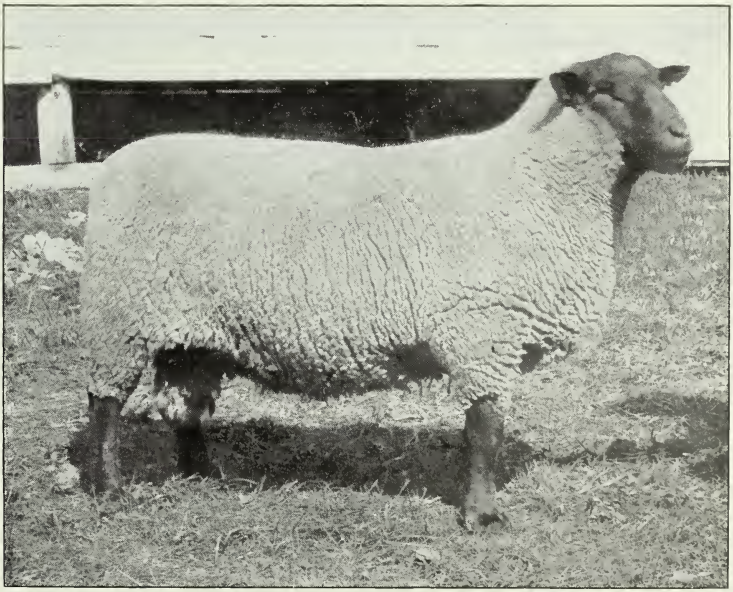

FIG. 173. CHAMPION SUFFOLK RAM, NEW YORK STATE FAIR, 1910. OWNED BY MILTON B. SISSON, ALMOND, N. Y.

The Hampshires are the largest and heaviest of the Downs. They are never a sheep to rustle, but deserve a place in the hands of intelligent breeders who are not afraid to feed.

The Suffolk and Oxfords have many of the characteristics of the last named; neither are as plentiful.

For men with level farms, who are good caretakers and whose business is to produce lambs for the early summer or fall market, I should recommend the Shropshires, Southdowns or Hampshires.

The Long Wools

These embrace the Leicesters, a very old breed and much more numerous in Canada than in the United States. Robert Blakewell of Shorthorn cattle fame, began the improvement of these sheep as early as 1755. They are large sheep with a white face and long coarse wool.

A generation ago the Cotswolds were very numerous in this country. Since then they have been largely superseded by the Downs. They somewhat resemble the Leicesters; their wool is very coarse and for purposes where long staple is needed, very valuable. They are not heavy shearers and their lambs require a long time to mature.

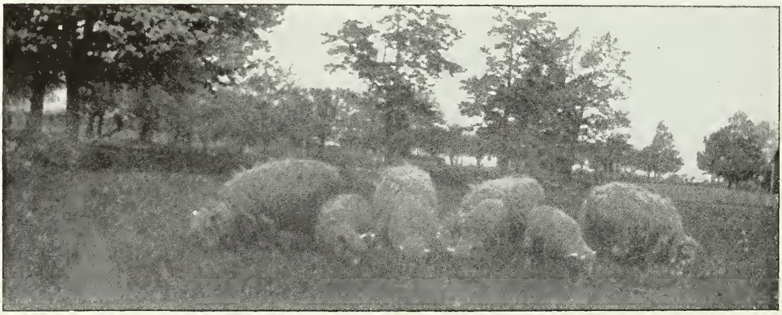

FIG. 174. COTSWOLD SHEEP FROM FLOCK OF D. H. TOWNSEND'S SONS, LODI, N. Y.

The Lincolns of today resemble the Leicester, and well they may, for they possess a strong infusion of this blood. Doubtless they are the heaviest sheep in the world. "Joe Wing" in "Sheep Farming in America," speaks of having seen quarters of this breed in England weighing ninety pounds. The wool is exceedingly long and they are heavy shearers. None of these long wools are as good mutton sheep as the Downs and they suffer even more from exposure on account of their very open fleece. I do not advise the eastern farmer to use any of the long wools, although they have a place on western ranches for a top cross where size is desirable and early maturity is not an important factor.

Cheviots

This breed occupies a place peculiar to itself. They are native of the Cheviot Hills in Southern Scotland, and are more hardy than any of the above-mentioned. The are beautiful in appearance with a fine fleece of good wool and make excellent mutton. They are well adapted for the hill farmer who wants more mutton and beauty than the Merinos afford with lambs maturing on pasture. They are not as easily confined as the last named or the Downs.

Merino or Fine Wools

One of the first importations of these sheep was by Robert R. Livingston of Clermont, Columbia County, N. Y., very early in the nineteenth century. In 1807 he imported a ram from France called "Rambouillett" which weighed 145 pounds and sheared nine pounds of wool. He paid 750 francs, or approximately $145 for him. A son of this ram which was named "Clermont," after his native town, weighed ten pounds more than his sire and sheared nine pounds and six ounces of wool. These rams with imported ewes and others of his own breeding furnished the foundation of many of the Merino flocks in New York and the East. On March 3, 1809, the legislature of the State of New York voted to publish 1,000 copies of a book by Mr. Livingston on sheep. This work of 250 pages called by him "an essay" was published in London in 1811. The style is what might be expected from a Livingston of that period and the subject-matter might be read with profit by the shepherds of today. His system of breeding has not been improved upon during the century.

They were the sheep of our fathers, and in the days when wool was the chief factor and shelter not abundant, they were well

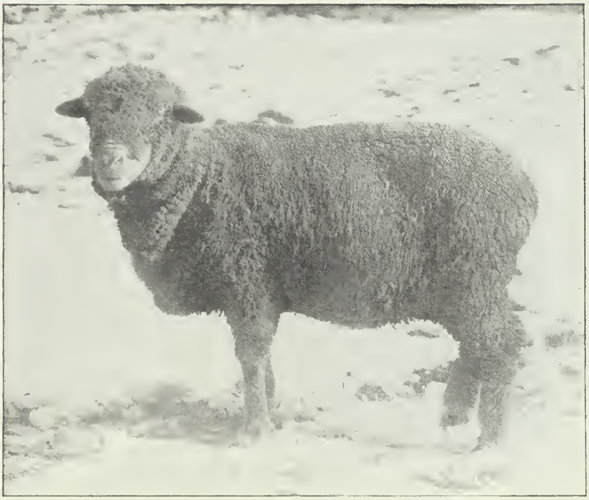

FIG. 175. RAMBOUILLET EWE

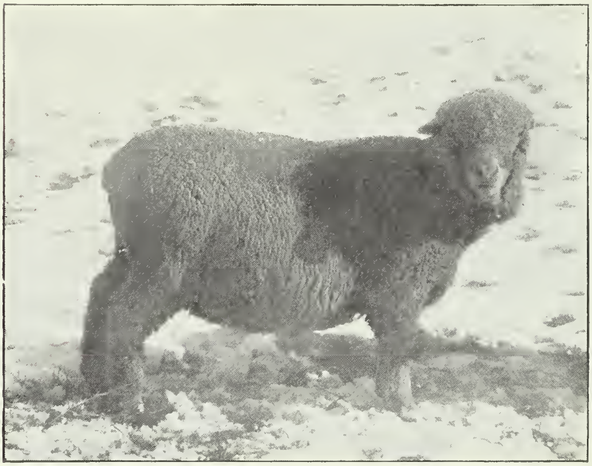

FIG. 176. DELAINE EWE

suited to their use. As broadcloth clothing went out of fashion and the coarser wools were more in demand, and mutton became the important thing, they were largely displaced by the strictly mutton breeds. Many who were eminently successful with the Merinos made failures with the latter expecting they would thrive under the same conditions. While I would advise no one to breed the small, wrinkled "Vermont" Merinos except for show purposes, the Delaine and Rambouillet are worthy of a place on many farms too rugged to profitably keep the Downs. They will suffer less from exposure because of the closeness of their wool; are good mutton, and their heavy fleece compensates for their less valuable carcass, although they are not to be despised in this respect. They will conceive very early and when mated with a mutton ram are very desirable for early lambs, being excellent mothers and large milkers.

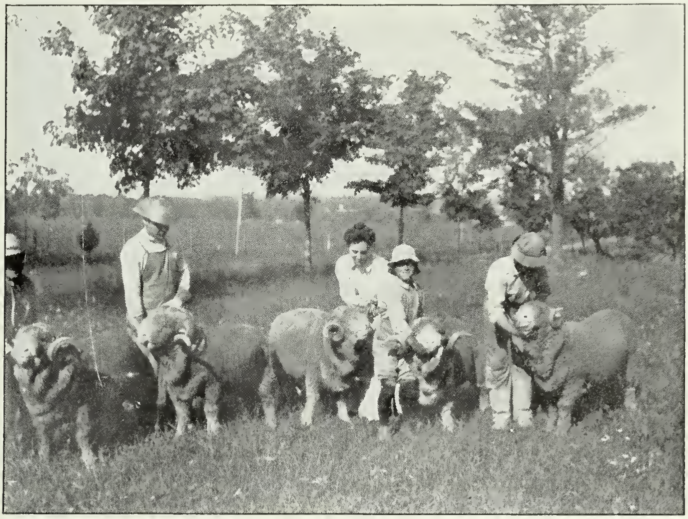

FIG. 177. RAMBOUILLET RAMS FROM THE FLOCK OF D. H. TOWNSEND'S SONS, LODI, N. Y.

The Dorset Horns

These are of mixed blood and take their name from their native home and the fact that both ewes and lambs have horns. They have been much improved in the last two decades and make

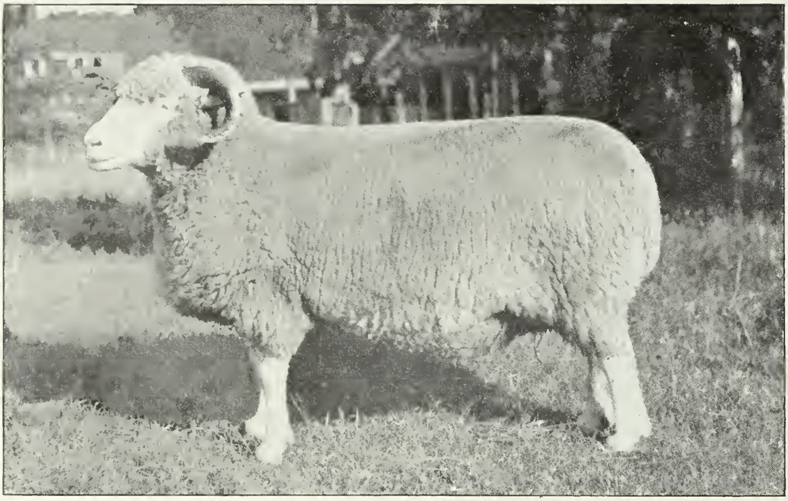

FIG. 178. DORSET EWE. OWNED AND RAISED BY HEART'S DELIGHT FARM, CHAZY, N. Y.

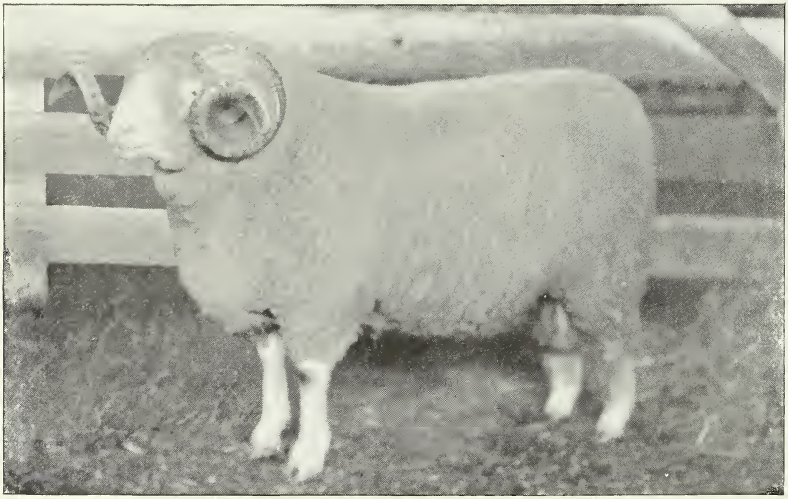

FIG. 179. DORSET RAM. OWNED AND RAISED BY HEART'S DELIGHT FARM, CHAZY, N. Y.

a very fine appearance. They have good quarters and an excellent fleece. Their chief value is for producing early lambs. They breed readily at any season and are very heavy milkers. It is said that long ago in England they were used instead of cows. The lambs mature very early but do not gain as rapidly after the first six months.

Tunis

These are the "broad-tailed sheep of Algiers." There have been several flocks of these in this country, in the South, for nearly two centuries. More recently they have spread North and over the eastern states, owing to their peculiar character as producers of early lambs. Being a native of a warm country they conceive readily in warm weather, maturing lambs as early as the Dorsets. They are fine milkers and the best of mothers. No lamb will go to market with the same amount of fat, particularly on the hind quarters, in better shape at three months of age. After this they mature more slowly. They are fair shearers and have been greatly improved in the forequarters in recent years. Any one who proposes to produce winter lambs should either use these, Dorsets or the large Merinos.

PURE BREDS VS. GRADES

I would not be understood from the above as meaning that everyone should keep pure-bred sheep. Men of limited means cannot afford to invest in any number, since the interest charges and depreciation are more with high-priced stock, and they should have better care. It is always desirable, however, that the stock should be uniform in type and approach as near as may be practicable to the breed best suited to the farm and that particular form of sheep industry the owner intends to follow. It is vital that the ram should be not only pure bred but a typical specimen of the breed. A grade may be a good individual but he is as likely to reproduce his grade ancestry as that of the pure breds from which he is graded. A pure bred will sire lambs of greater uniformity and by carefully selecting the strongest and most typical specimens of these one can breed up a flock that in appearance and real worth will be nearly or quite as profitable for production as pure breds. By the purchase of a few regis-

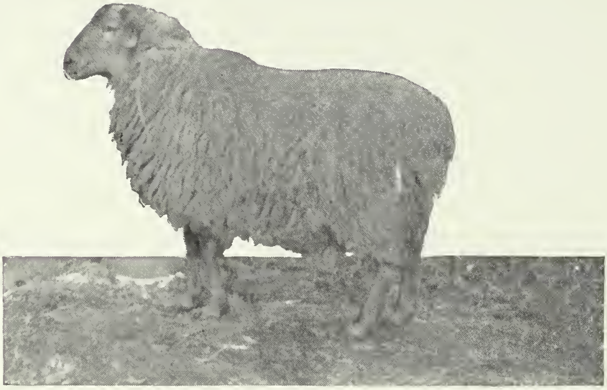

FIG. 180. YEARLING TUNIS RAM "XERXES" NO. 1653. OWNED BY J. N. MACPHERSON, SCOTTSVILLE, N. Y.

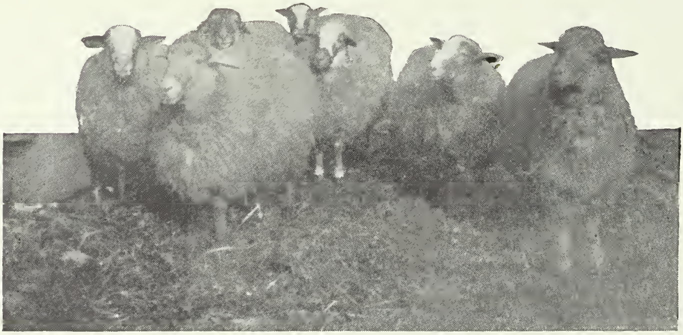

FIG. 181. GROUP OF TUNIS EWES. OWNED BY J. N. MACPHERSON, SCOTTSVILLE, N. Y.

tered ewes a flock of pure breds will finally be obtained at a small cash outlay. The increase from such may be sold as breeders for at least twice that which the grades will bring for mutton.

FEED AND CARE

If the pasture is scanty, Dwarf Essex Rape may be sown in the early spring at the rate of two pounds to the acre to which the sheep or lambs can have access during the summer; or, if sowed in August, will afford splendid feed until the ground is covered with snow. Sheep should never be turned on rape when they are empty or when it is wet, since it will likely produce bloat. It is poor economy to leave the sheep on the pastures — worse still the meadows — in late November or December after the grass is frozen. They will fill themselves with it but it contains very little nutriment. With full stomachs they will be drawing on their stored-up flesh and more feed will be required later to have them in proper condition. Early sowed rye makes an excellent pasture; if not fed too close it will benefit rather than injure the crop. During winter, sheep should have some form of succulence. For this there is nothing cheaper than the ordinary purple top turnip. These can often be grown in the corn, or after early potatoes, and the cost will be little more than the harvesting. Silage is a very close second. Two bushels to fifty sheep may be fed with great profit. Cabbage is even better. Early cut hay — either clover or mixed grasses — will do much to provide suitable food. Coarse timothy should never be fed. It lacks nutriment and the sharp stalks sometimes penetrate the walls of the stomach. Bright barn-housed straw is more desirable if one is short of coarse fodder. Sheep love a variety. An occasional feed of corn fodder is excellent. Where beans are grown, the pods and smaller stalks make fine forage for them.

How much and what sort of grain to feed must be determined by the condition of the sheep and what one intends to do with them. If they come into winter quarters in good flesh and are not to drop their lambs until pasture; with some form of succulence and clover or alfalfa hay, no grain will be necessary. If they are thin enough grain should be fed to put them in good flesh before lambing. This will materially increase the growth of wool. A sheep poor in flesh

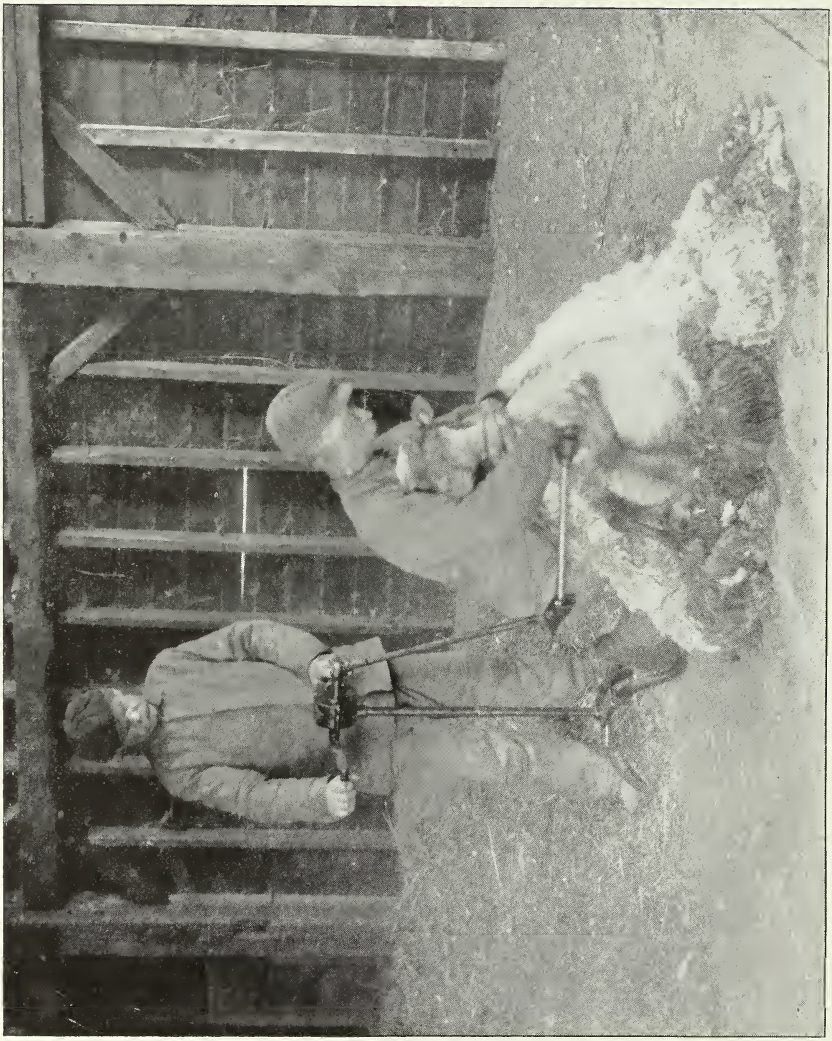

FIG. 182. SHEEP SHEARING ON THE FARM OF JARED VAN WAGENEN, JR., LAWYERSVILLE, N. Y.

is always a light shearer. Success with lambs aside from vigorous mature parent stock, depends more on a sufficient food supply of the right character than any other one thing. A lamb is made up of bone, blood and muscle. This calls for mineral matter and protein in the food of the mother, in order that she may supply building material in addition to the requirements of her own body and have an abundance of milk for the lamb at birth. Corn will not furnish this, and an excess of it often produces goiter in the lambs. When lambs are born in the winter, grain should be given at least a month before they are expected. If the sheep are thin, two months is better; beginning with a half pint daily and gradually increasing to a whole one. This grain may be bran, oats, brewers' grains — wet or dry — or any protein by-products such as one would feed to dry cows or heifers. After the lamb is born, corn may make up from one-quarter to one-half of the ration.

Sheep should have access to fresh, pure water at all times. They need an abundance of litter under them with dry, well-ventilated — not necessarily warm — quarters. They should not be allowed to crowd through small entrances or against sharp projecting corners. The feeding racks and mangers should be cleaned of any left over feed or litter. Sheep will lose in flesh with an abundance of feed before them if fresh food is placed on that they have breathed over.

It is most desirable that the ram should have attention at time of service. It will always pay to stable him during the day with a supply of fresh water, early cut hay, with plenty of oats and a little oil meal added. This will keep up his vitality, and if he is only placed with the flock at night he will not exhaust himself, the lambs will be stronger and come more evenly with less barren or late breeding ewes. These details attended to will insure lambs strong and vigorous, able to stand and nurse in coldest weather with an abundant milk supply by the mother. Weaklings, or ewes not owning lambs, will be entirely done away with. Sheep should not be allowed to run where the hayseed or dust will get into the wool. It is impossible wholly to separate it, and will depreciate the value of the fleece several cents per pound. Nothing except soft wool twine should ever be used to tie the fleece. Binder twine is particularly objectionable as the fiber gets into the wool and cannot be separated. It is always better to shear before the sheep go to pasture. They can be protected in the barn much better than in the open. The soft grass will loosen their bowels and much wool around the hind parts will be soiled and made worthless.

WINTER LAMBS

The name "hot-house" lamb is misleading. Such lambs are produced in ordinary barns with the care suggested above. I have had a half dozen born during a mid-winter day when the mercury stood at zero and everyone was up and nursing within a half hour without assistance. In this barn water freezes on cold nights.

For those who have limited pasture areas, this branch of sheep husbandry will be found very profitable. It is difficult to get sheep to breed in warm weather; hence, the supply will not be large. One is catering to a trade not likely to be affected by hard times. The winter lamb at from $6 to $15 per carcass, fifty pounds live weight, is a luxury afforded only by the well-to-do, and the demand for them is increasing. Formerly New York City was the only good market; now all the large cities find sale for them. The leading hotels in our capital city of Albany serve them regularly on their tables. The average man thinks raising them a difficult job and is afraid of a little extra feeding. For all these reasons the business is not likely to be overdone and hence is profitable. First, one must have sheep that will breed early. Those best suited for this purpose have been emphasized. Lambs fit to go to market after the holidays may sell from $10 to $15; after this the price drops to $5 or $6 in May. It costs no more to grow the early ones, if the sheep will breed. This means mating in July or August. Grain feeding the ewes prior to this time will be of advantage; then observation of the details mentioned under "feed and care" are necessary. There is nothing that will grow a lamb so fast as its mother's milk. Whatever one would feed to a cow to make her produce will serve the same purpose with a sheep. After the lambs are a couple of weeks old they will eat grain by themselves from a box to which they can have access away from the ewes. A little brown sugar at this time will be relished and at five cents per pound one can afford to feed it to lambs bringing twenty-five cents per pound. A good ration is made up of a half bushel of corn meal or cracked corn, twelve quarts of oats or bran or a combination of both, and four quarts of linseed meal, giving only as much as they will eat up clean three times a day. It is not difficult to make them gain five pounds per week which will put them in market at from eight to twelve weeks old. A better proposition, even at six dollars, than to keep them six or eight months at the same price or less. When the lambs are taken away, the ewes are dried up and one has his lamb crop in market by pasture time. To bring the highest price such lambs must be fat. It is useless to ship any other kind. They can be hog dressed with the feet taken off at the knee and gamble joint. Many prefer the head left on.

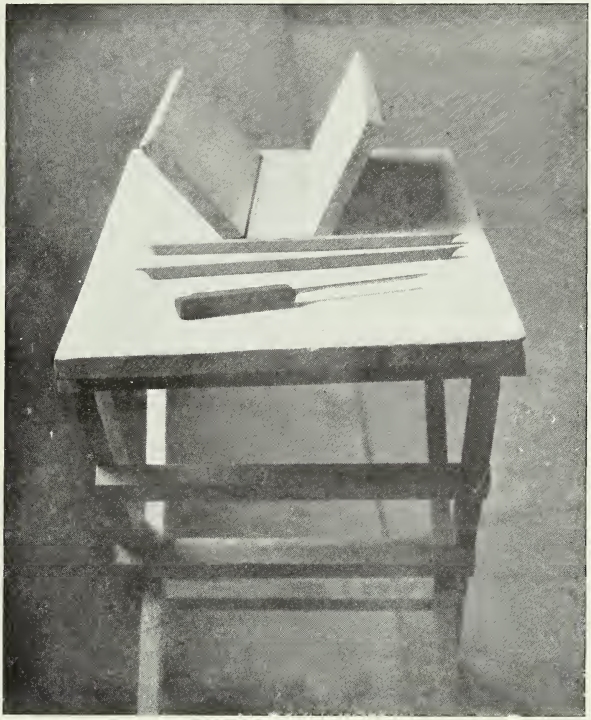

FIG. 183. SHEEP DRESSING TABLE, KNIFE AND BACKSETS

The wool should be sheared from the abdomen, the entrails removed, and back sets placed behind to hold the skin back and the caul fat fastened with wooden toothpicks over the exposed part, particularly the hind quarters and ribs. They never should be shipped until they are thoroughly cooled through. Then they are wrapped in cheese cloth with coarse sacking outside. They can be shipped by express cheaply and a long distance.

MARKET LAMBS

Many dollars are paid out for mutton lambs from outside the community or state, which could profitably be produced at home, thus solving the problem of eliminating the middleman's profit. I was in a section last fall admirably adapted to sheep, which also had been filled all summer with city people able and willing to pay good prices for food, yet but a few dollars had gone into the hands of local farmers for lambs. The proprietor of a fashionable resort there told me he would prefer to buy from the locality, but most of his supply had to come from New York City, two hundred and fifty miles distance, shipped there from the west or Canada. What difference can a wool tariff make under conditions such as these?

Late lambs weighing about sixty pounds, too light to bring best prices in market, can be purchased in the fall from pastures. Such can often be had for at least two cents per pound less than they will sell for when fat, weighing from eighty to one hundred pounds. On good feed they will begin to grow rapidly in October when they will eat a little corn on the pasture. One pound there will accomplish as much as two combined with winter feed. They will also have learned to eat it, so that there will be no lost time when they will have come into the barn. They will then, when properly fed, grow rapidly, gaining in live weight as well as price. This makes a splendid way to market clover and early cut hay as well as oats, peas and corn grown on the farm. It will pay to use some bran or oats and a little oil meal with the above; also plenty of roots or silage. At prevailing prices cottonseed meal is excellent. No stock need more careful looking after. They should be graded as to size and vigor in small flocks, fed three times a day

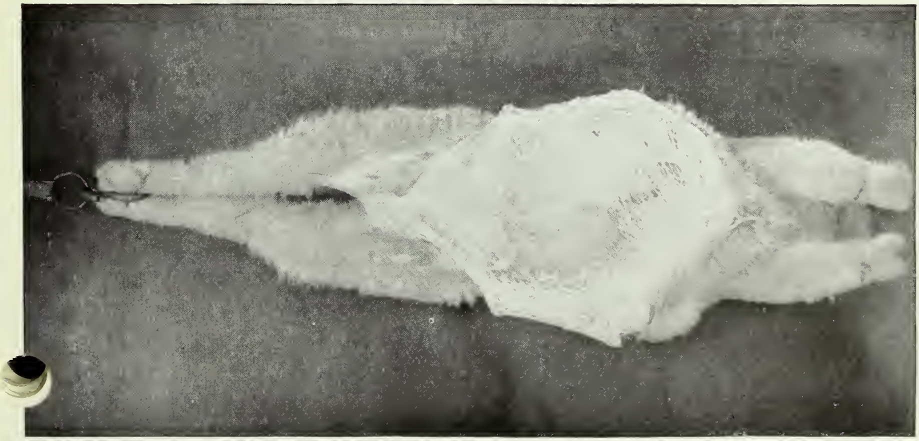

FIG. 184. THE CAUL PROPERLY SPREAD OVER THE CARCASS

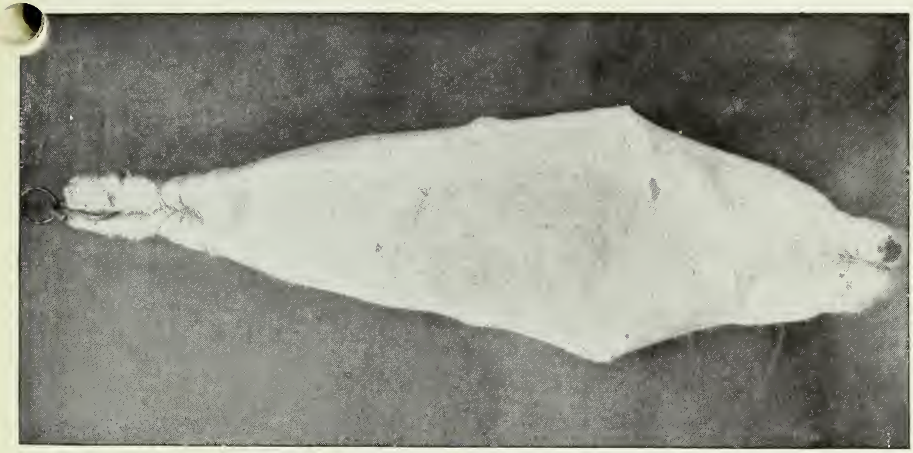

FIG. 185. CARCASS SERVED IN BURLAP READY FOR SHIPMENT

no more than they will clean up quickly so as to come hungry to the next feed. If by chance they are overfed, it is better to skip a feeding and then feed lightly until their appetite is restored. They may be shipped at any time when fat and the market is right, either before or after shearing.

The Hebrew bard sang "All we, like sheep, have gone astray." This has been and is too true all over our state in regard to this great neglected industry. May the day return when, " In green pastures beside the still waters " our sheep may be multiplied an hundred-fold.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

UNIVERSITY OF ILLINOIS
AUG 21 1915

Circular 81

Swine

BY

H. B. HARPENDING

Breeder of Berkshire Swine

Reprint from Bulletin 50

SWINE

H. B. Harpending

Breeder of Berkshire Swine

BERKSHIRE

Originating in Berkshire County, England, more than 100 years ago, the Berkshire is probably the oldest distinct breed of swine. A comparison of the old English Berkshire with the Berkshire as bred in America today, would be a revelation of the possibilities obtainable by careful selection and breeding of different types to secure a desired result.

The Old English Berkshire was large in size, long and deep in body with good hams and good constitution. They possessed fairly good bone, thick shoulders and good bacon sides with a quality of meat which was excellent for that day. They were of a sandy or reddish brown color, spotted with black, with a coat rather long and somewhat curly, having some bristles; and their ears were large, coarse and flopping. They were poor feeders and slow maturing.

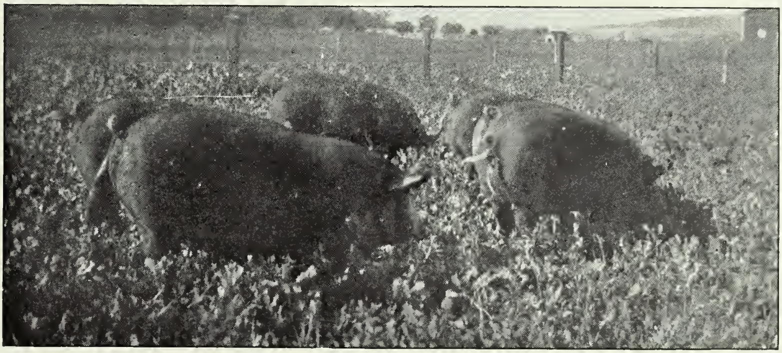

Fig. 186. Berkshire Swine. Owned by H. C. and H. B. Harpending, Dundee, N. Y.

This foundation stock was crossed with individuals of the Siamese, Neapolitan and Chinese breeds from southern Europe, which were of the quick maturing type but smaller in size. The result was a type very like the standard Berkshire of today. However, as is often the case, some breeders noting the good results from crossing with the southern blood carried it too far. This accounts for the short, chunky, undersized Berkshire which a few years ago brought the Berkshire into disrepute among breeders who desired size and quality combined. Fortunately, other breeders with more discrimination came to the rescue, with the result that we have the long body, deep side, short, broad, dished-faced, early maturing Berkshire of today. Combined with the enormous size of the foundation Berkshire stock, is the fine quality and docile disposition of the southern infusion.

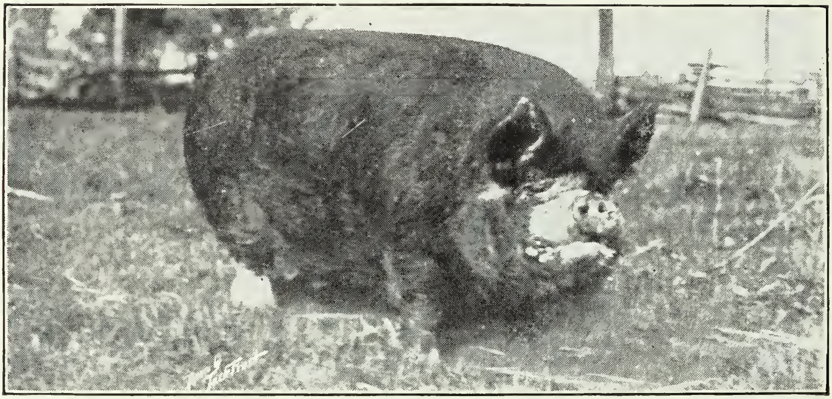

FIG. 187. A TYPICAL BERKSHIRE BOAR. RAISED BY H. C. AND H. B. HARPENDING, DUNDEE, N. Y.

The Berkshire of today has long held its place as unsurpassed in the production of meat and lard of the highest quality and with a large proportion of lean meat which brings it into popular favor as a bacon hog. No other breed can be more easily fattened at any age. It is very prolific and does well in any climate. The sandy or reddish color has been superseded by a black coat with six white points, the large drooping ear by the small erect ear set wide apart; the snout is very short, the face broad and well dished, neck short, chest broad and deep, legs fine, strong and short and set wide apart, bone fine and very hard and the coat fine and silky with no bristles even on the boar. The ham is deep and thick extending well up on back and holding thickness well down to hock.

Berkshires were imported from England as early as 1770. Bred pure for many years, they are noted for their prepotency. They are hardy in constitution and active in disposition and are good grazers; in fact, they reach their highest degree of excellence when developed with moderate facility for range. These qualities combined with the superior quality of meat produced, and the tractability of the mature animals, make the breed a favorite with the breeder and the butcher in every section of the country.

POLAND-CHINA

The Poland-China is distinctively of American origin developed under ideal American conditions. The foundation stock traces back to old Berkshires and old Bedfordshires imported early in the nineteenth century or earlier. Crossed and recrossed with other types, few families were pure enough in blood to produce even a partial likeness to themselves. The prevailing type was coarse, rough, slow-maturing, spotted with various markings, very prolific and free from disease but not maturing into marketable pork until three or four years of age. About the middle of the nineteenth century, the breeders of the Miami Valley, Ohio, had succeeded in producing a distinct type, and in the early sixties the Essex and black up-eared Berkshires were crossed with this type, giving the Poland-China quicker maturing and better feeding qualities.

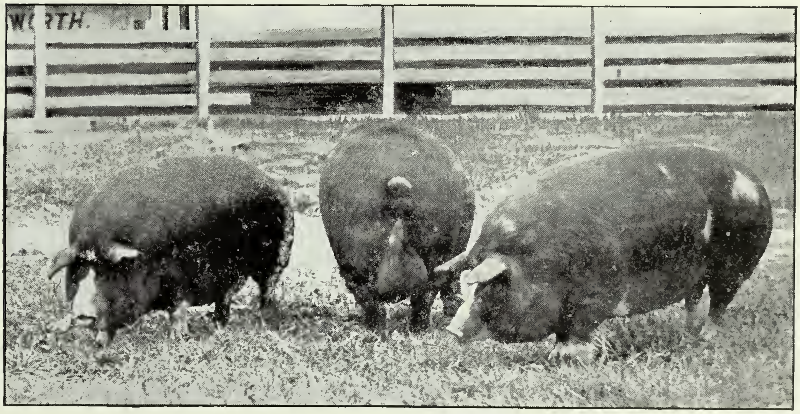

FIG. 188. POLAND CHINA SWINE. BRED AND OWNED BY R. F. SEELEY, WATERLOO, N. Y.

From this time, Mr. Dawson says, no outside blood has been introduced into the Poland-China breed and the main effort of the breeder has been to intensify and fix the color and type. The Poland-China of today, as we all know, is black with six white points, an ear that is two-thirds erect and one-third dropping.

At present there are two distinct types of the Poland-China breed. Some breeders have for some years sought to develop quality, early maturity and smoothness of form and have followed this standard to such an extent that this strain became smaller in size, shorter of body and less prolific and less valuable for pork production. Other breeders, noting these tendencies, have been breeding for size, scale and prolificacy without regard to many of the fancy points, with the result that they have secured hogs of enormous size but somewhat lacking in quality.

The Poland-China breed of the finer type is smooth with thick broad sides; broad, heavy hams extending well down on the hock, the legs short, set well apart; the tail fine, the head broad, slightly dished face tapering gradually to end of nose which is of medium length, back broad and straight or slightly arched, neck short and wide. The large type of Poland-China is longer in body and also longer in the legs with a heavier ear. With greater size, the flesh is coarser grained and hence not so good in quality.

The Poland-China belongs primarily to the fat producing type of swine, its phlegmatic temperament rendering it averse to much activity. For this reason, it ranks high in pork and lard production. However, some families have been developed for bacon production with a degree of success.

CHESTER WHITE

Uncertainty shadows the early history of the Chester White, although we know it to be of American origin with Chester County, Pennsylvania, for its birthplace. Being one of the oldest distinct breeds of swine in America, it is without doubt a result of crossing between some of the native white hogs of Pennsylvania, the old Bedfordshire and other white swine imported from England about 1818. These were generally white in color, although some had black or blue spots. By careful development, a type white in color and free from spots was obtained, but they were either large, coarse and slow maturing; or small, compact and quick-fattening. However, during the past thirty years, great improvement has been made. The size varies from a very large hog to one of medium size, and in conformation some are extremely long, coarse individuals while others are much neater in appearance, rather blocky in form, with heavy hams and smooth shoulders, back broad and smooth; medium length snout,

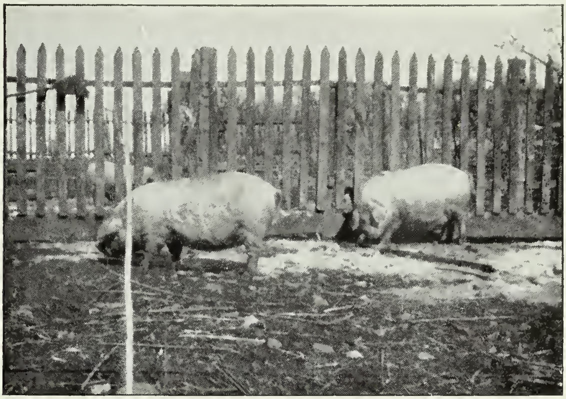

FIG. 189. TWO-MONTH-OLD O. I. C. SOWS. OWNED BY B. F. PHILLIPS & SONS, EAST BLOOMFIELD, N. Y.

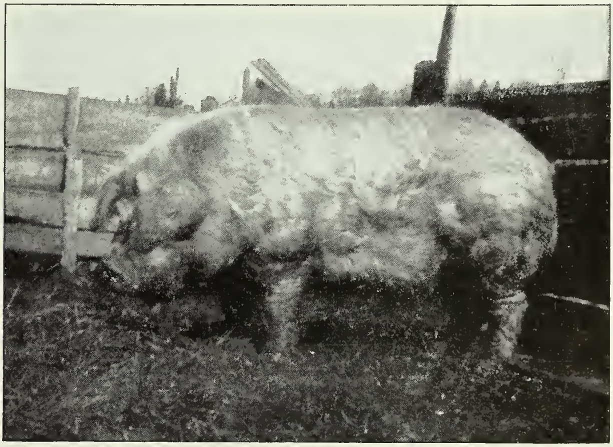

FIG. 190. O. I. C. BOAR, TWELVE MONTHS, WEIGHT 325 POUNDS. OWNED BY B. F. PHILLIPS & SONS, EAST BLOOMFIELD, N. Y.

not sharply dished face but tapering to a somewhat pointed nose. The ear droops similar to that of the Poland-China, being erect part of its length with the tip drooping.

There are different strains of the Chester White breed as is true of most swine families. Notable among these are the plain Chester White and the O. I. C., meaning "Ohio Improved Chester." Some of these are found with black spots in the skin which are covered sometimes with white and sometimes with black hair. Some breeders consider these two separate breeds but they are exhibited in the same class at state and other fairs and there is no appreciable difference between them.

Like the Poland-China, the Chester White is particularly adapted for pork and lard production. They are sluggish in disposition, not inclined to much activity, possess good feeding qualities and make rapid growth, producing a very large proportion of fat meat to the amount of lean meat in the carcass.

CHESHIRE

Cheshire sows imported from England and mated with boars of several different lines of breeding resulted in the Cheshire breed, formerly called the Jefferson County hog, because of the fact that breeders in that locality were the prime movers in developing the new breed. Yorkshire, Suffolk and Cavanaugh blood was crossed with the English Cheshire and inbreeding practiced to develop the type desired.

The Cheshire is a white hog, rather long and cylindrical in body, rather long legs, fine but strong in bone. The snout is of medium length and slender and the face slightly dished. They mature early and are prolific and usually make good mothers. The flesh is of good quality, between the bacon and the fat or lard type, leaning rather toward the bacon.

While the above seems to be the generally accepted status of the Cheshire swine, there are some well-known authorities who hold that the Cheshire is simply a derivative of the Yorkshire, the variation being a result of inbreeding and crossing. The best types, except for the snout and color, resemble the most approved type of Berkshire; and for this reason has been facetiously styled by some the "White Berkshire."

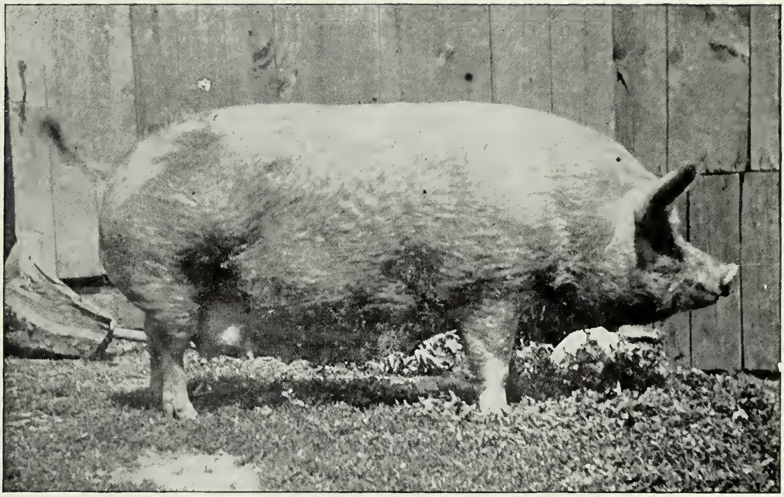

FIG. 191. CHESHIRE SOW "BEAUTY." BRED AND OWNED BY THE STATE COLLEGE OF AGRICULTURE, CORNELL UNIVERSITY

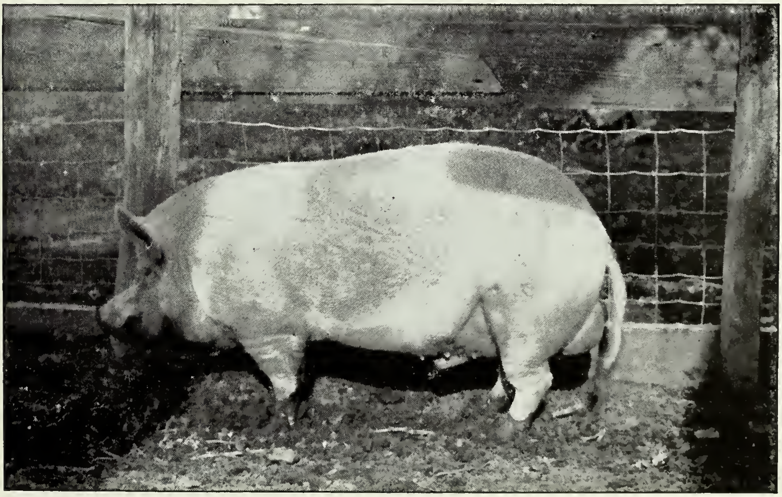

FIG. 192. CHESHIRE BOAR "WHITE CHIEF." BRED AND OWNED BY THE STATE COLLEGE OF AGRICULTURE, CORNELL UNIVERSITY

DUROC-JERSEY

If some writers are to be credited, the Duroc-Jersey occupies a leading place in point of ancestry and length of pedigree, some red hogs from which they might have descended having been brought to this country by Columbus. Certain it is that some of the ancestors of this breed were brought to America by slave traders early in the seventeenth century. The breed has been known at different times by many names, Red Hogs, Red Berkshires, Guinea Reds, Jersey Reds, Red Rocks and Durocs.

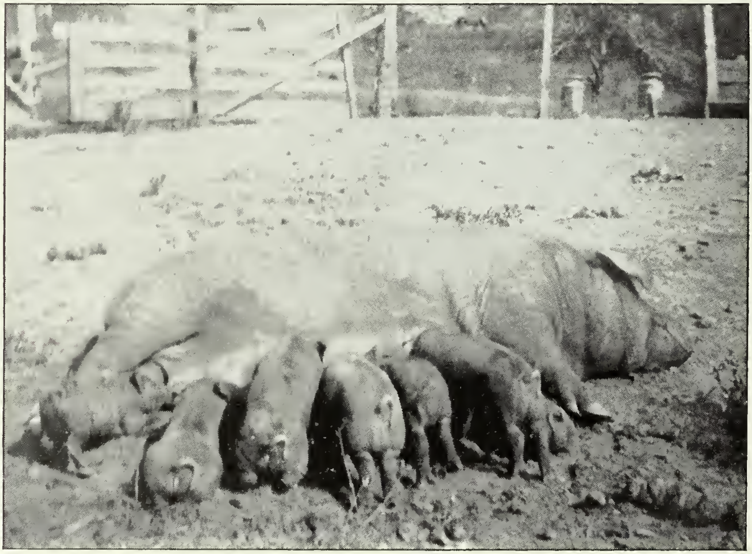

FIG. 193. DUROC-JERSEY SOW AND PIGS. OWNED BY C. E. BARNES, OXFORD, N. Y.

The Jersey Reds bred in New Jersey were of extreme size but slow to mature. In conformation long in body with good chest capacity, coarse in bone and flesh. The hair was inclined to stand erect and was sometimes bristly on the back, the ears large and loppy, the legs long and the tail heavy and bushy. The main points of value were the extreme size and strong constitution.

The Durocs were bred largely in Saratoga County, N. Y., later, notably by the late F. D. Curtis; and were medium in size, compactly built, with short legs, neck short and thick, ears light, head rather small, full smooth shoulder, back strong and wide with plump full hams.

About 1833 the breeders of these two types of red hogs joined forces with a view of producing a type combining the best features of both varieties. They also crossed these hogs with some red hogs imported from Spain about that time and later with others imported from Portugal. The type produced by these crosses became a distinct breed but was still known by several different names. The breeders finally merged into two factions, one adhering to the name Jersey Red and the other to the Duroc until 1883 the American Duroc-Jersey Swine Breeders Association was formed and the name Duroc-Jersey adopted.

The Duroc-Jerseys belong to the fat or lard type of swine although active in disposition. They are considered good grazers and good feeders. There has been marked improvement in the breed during the past few years. The large lopped ear of the Jersey Red is still apparent, but the ideal individual has a long, deep body, broad back, the neck is short and thick and the face slightly curved and nose rather long. The head is small and eyes set wide apart. The legs medium in length and size, color varying from dark cherry red to light yellowish red. The hair medium fine but inclining to bristles on top of shoulders. While, as noted, many improvements have developed during recent years, these have been to some degree at the expense of size, and the Duroc-Jersey of today is diminishing in size, the enormous rangy individual of the original Jersey Red type having disappeared leaving a well built animal shorter in body, compactly built, with medium short legs similar in conformation to the Poland-China. They are very prolific, and excellent mothers.

STATE OF NEW YORK

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CALVIN J. HUSON, Commissioner

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AUG 21 1915

Circular 82

Farm Poultry

BY

ELLIS M. SANTEE, M. D.

Director of Agriculture, Good Will High School, Hinckley, Me.

Reprint from Bulletin 50

FARM POULTRY

Dr. Ellis M. Santee
Director of Agriculture, Good Will High School, Hinckley, Me.

Great changes have taken place during the last few years on the New York State farms with reference to poultry. This improvement has been brought about principally by good prices and a knowledge of better methods. The nearness to the large cities and lower express rates make it possible for the New York State farmer to profitably compete with the poultrymen of the Middle West who have the cheaper food but the longer haul and greater cost of transportation. The state experiment stations, led by Professor Rice at Cornell, have done much to cheapen the cost of production and increase returns on poultry products.

BREEDING

Too much attention has been paid to fancy points and too little to the utility side of the problem. For many years it has been commonly accepted as true that a hen could not profitably be kept longer than the end of her second laying period. Professor Rice has demonstrated that a properly developed hen may be kept four and possibly five and six years. Two factors have entered into a lowered constitutional vigor in many of our flocks which manifests itself first in the large number of dead germs found in the shell when attempting to incubate the eggs. The hatching of pullet eggs and the indiscriminate selection from the egg basket for incubation at a time when a hen is laying, if ever, during the year, are the causes which probably furnish most of the trouble. The proper handling of pullets requires that they be forced to

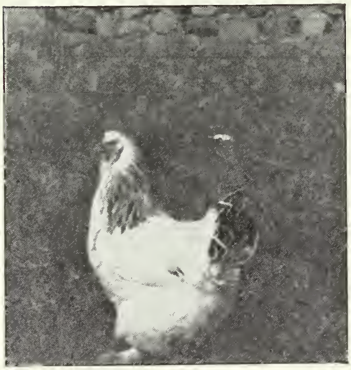

Fig. 194. Light Brahma Hen

early production before they have matured and that they be kept at it as much as possible during the following year. Where this method is followed, she is in no physical condition to produce the strong, vigorous germ that should be looked for for incubation, and no matter how well-bred she may have been, she should not be expected under these circumstances to reproduce her own good qualities in the offspring. The method followed on the best poultry plants today is to force the pullets to the largest possible production, selecting those that laid first, kept longest at it, moulted latest, and produced the most eggs, for the breeding pen the following year. They are then given a long rest and brought into laying about the time, or a little before the incubating season opens. This method, if followed a few years, will breed up a heavy laying strain of almost any variety or breed.

BREEDS

A wrong impression is very prevalent as to the value of various breeds. A strain of any breed is valuable in just the proportion in which care is exercised in its development. All of the breeds have been developed from the one old jungle fowl. It has simply been a matter of selection and intensifying the desired quality. It is just as easy to select for large production as it is for a given shape or feather. The White Leghorn has come to be recognized as the egg breed for New York State, due probably to the fact that she produces a large white egg which always commands a premium in New York City and many of the other cities of the state. But this does not mean that all white leghorns are desirable. There is no recognized breed that is so poor that a well-developed strain of it would not be preferable to a poorly developed flock of white leghorns. It is probably true that under present conditions and prices of food, it will be more profitable for the New York State farmer to strive for eggs rather than meat or

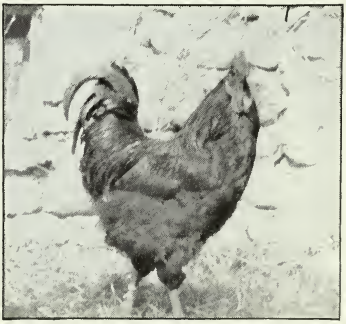

Fig. 195. Black Orpington Cock

meat and eggs. Where the fowl for meat is desired, some one of the American breeds will be found more profitable than any of the Mediterraneans of which the leghorns is the chief type. However, if it is a question of broilers, a leghorn will produce any weight up to about a pound and a half for less than any of the so-called meat breeds. It is customary when seeing a large producing flock on a neighbor's farm, to feel that a mistake has been made in the selection of our own and a change made to a flock of the same breed and variety as the neighbor has; many times going to some other place for the foundation stock. The matter of prime importance is, first to select the variety which we like best, that we will take best care of, that we will show to our friends with the greatest amount of pride, and then develop a heavy laying strain, making production the first requisite instead of feathers and shape.

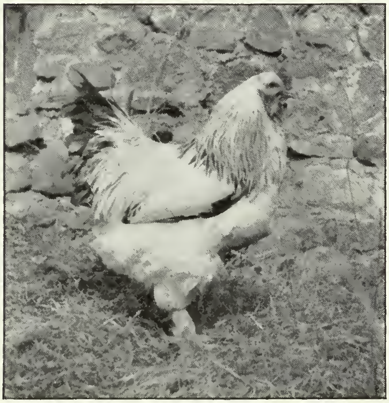

FIG. 196. LIGHT BRAHMA COCK

Probably the best method is to select a hen of known large production and a male bird of the same variety, having a mother of equally large production, and from this one pair, by careful line breeding, mating the cock to his own daughters the second year, and the hen to one of the cockerels the same year. In this way two lines of breeding may be established and one need never go outside for a single drop of new blood.

INCUBATION

In selecting eggs for incubation, not only the parent stock should be right, but the egg itself should be right and properly cared for after the selection is made. The large egg not only produces the large chick but the weight of the chicks at six weeks of age will vary in proportion to the weight of the eggs from which they were hatched. The ill-shaped egg is apt to show itself in the product of the offspring and should not be selected for the incubator. Eggs begin to incubate at 70 degrees Fahrenheit, therefore, it is very important that they be kept at a temperature below that point while they are being saved for hatching. A dry, cool cellar is an ideal place in which to store them; a damp mouldy one lowers the hatchability of the eggs. Whether a hen or an incubator shall be used will depend upon the number to be hatched and the time of the year they are wanted.

There is no best incubator. Any one of the better-known makes will be found satisfactory. Run it according to the directions the maker gives. He is in a better position to know his machine than anyone else. Do not be in a hurry to get the chicks into the brooder. Nature furnishes their food supply for at least forty-eight hours, and no food or water should be given them under thirty-six hours. Never open the machine after the eighteenth day until the hatch is fully completed and do not let your sympathy impel you to help a struggling chick out of the shell. If it can't get out alone it will never be worth raising.

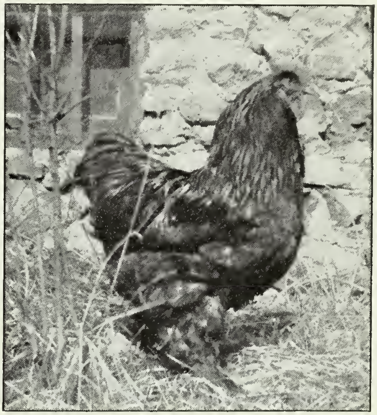

FIG. 197. PARTRIDGE COCHIN COCK

BROODING

Be sure that the hover furnishes a temperature of 100 degrees before the chicks are placed in the brooder, and also that there is a place where they may go, having a temperature of not over 70 degrees. After the first week the hover temperature may be lowered to 90 degrees but never lower until they have feathers to protect them. Filth and mortality are twins. Keep the brooders clean and disinfect often.

REARING

After the chicks are fully feathered they suffer much from the excessive heat of summer. A shady place should always be accessible to the growing chicks. A corn-field is ideal. It not only furnishes the shade but also the bugs and worms and protection from hawks and crows.

Separate the cockerels and pullets at the earliest possible moment, selecting the promising cockerels for breeders and fitting the rest for market before they have cost more than they will bring. The early hatched cockerel will bring fifty cents when he weighs a pound and a half. Later on when he weighs from two and a half to three pounds he will bring about fifty cents. After he has been kept until the holiday time, weighing about four or five pounds, he will bring in the neighborhood of fifty cents, then why give him that extra feed and care.

The pullet that for any reason is checked in her growth will never make a profitable hen. They should be kept growing and forced to the earliest possible production consistent with the maturity of their bodies.

HOUSING

Up to within a comparatively recent period, a visit to any given number of poultry houses would have shown almost if not quite an equal number of designs, but we are coming to a type of laying house which is becoming very prevalent and is probably destined to become more so. A hen being the highest temperatured animal on the farm requires the most oxygen to maintain that temperature. About a dozen years ago when the muslin ventilation was first used it was looked upon to solve the ventilating problem but since that time experiments have shown that a house with the entire front above from two feet to three feet from the floor is preferable to the one having the muslin front. In this type of house the muslin curtain is furnished to be closed only during stormy weather. This type of house also

FIG. 198. WHITE WYANDOTTE COCK AND HEN

requires the tight partitions and a depth of not less than sixteen feet, preferably twenty, with the perches in the extreme back of the pen. This also enables us to solve another problem — that of labor — since the larger unit, at present cost of labor, is more profitable than the smaller one, and it may successfully be kept in the open-front house while it could not be thus kept in the old-style warm house. The first impression to one who has never tried the fresh-air house is that wattles and combs would be frozen the first night. The fact is, that even leghorn combs withstand the severest weather in this type of house if they have become used to the cold by being kept in the open front house from early in the fall. A hen cannot do her best without sunlight and plenty of it; therefore, if the open front house is not used, a large window should be provided in the east corner of the south side of the house. It is important that the floor of the poultry house be smooth, tight, warm and vermin proof. No other material meets all of these requirements like concrete, but it is important that the concrete floor in the poultry house be insulated to keep down the moisture and consequently the cold. The best and most economical method of building a poultry house floor is to first smooth off the ground and then lay on a coat about one inch thick of concrete, made by mixing gravel, sand and cement, about five of gravel to three of sand and one of cement, making it rather wet, smoothing off with a hoe or a float and then rolling on single ply tar felt roofing, then covering this with about two inches in thickness of the same concrete material having the gravel not too coarse, mixed very wet and smoothed off with a float.

FEEDING

For many years on my own farm at Cortland we have followed the plan adopted by Professor Rice at Cornell and have found it so satisfactory that it has been adopted here at Good Will High School, and is here given as the best with which I am familiar.

CORNELL RATION FOR CHICK FEEDING

THE RATION

Mixture No. 1		**Mixture No. 2**	
Rolled oats	8 lbs.	Wheat (cracked)	3 lbs.
Bread crumbs or cracker waste	8 lbs.	Cracked corn (fine)	2 lbs.
Sifted beef scrap (best grade)	2 lbs.	Pinhead oatmeal	1 lb.
Bone meal	1 lb.		

Mixture No. 3

Wheat bran	3 lbs.
Corn meal	3 lbs.
Wheat middlings	3 lbs.
Beef scrap (best grade)	3 lbs.
Bone meal	1 lb.

Mixture No. 4

Wheat (whole)	3 lbs.
Cracked corn	2 lbs.
Hulled oats	1 lb.

Mixture No. 5

Wheat	3 lbs.
Cracked corn	3 lbs.

THE METHOD

1 to 5 days

Mixture No. 1, moistened with sour skimmed milk, fed five times a day; Mixture No. 2 in shallow tray containing a little of No. 3 (dry) always before chicks. Shredded green food and fine grit and charcoal scattered over food.

5 days to 2 weeks

No. 2 in light litter twice a day. No. 3 moistened with sour skimmed milk, fed three times a day; No. 3 (dry) always available.

2 to 4 weeks

As above, except that the moist mash is given twice a day.

4 to 6 weeks (or until chicks are on range)

Reduce meals of *moist mash* to one a day; Mixture No. 4 in litter twice a day: dry mash always available.

6 weeks to maturity

No. 3 and No. 5 hopper fed. One meal a day of moist mash if it is desired to hasten development.

FURTHER DIRECTIONS

1. Provide fine grit, charcoal, shell and bone from the start.
2. Give grass range or plenty of green food.
3. Have fresh, clean water always available.
4. Feed only sweet, wholesome foods.
5. Avoid damp and soiled litter.
6. Disinfect brooders frequently.
7. Test all beef-scrap before feeding.
8. Keep chickens active by allowing them to become hungry once daily.
9. Feed *moist* mash sparingly.
10. Keep *dry* mash always before the chicks.

CORNELL RATIONS FOR LAYING HENS

The following whole grain mixture is fed morning and afternoon in a straw litter:

BY WEIGHT

Winter

Wheat	60 lbs.
Corn	60 lbs.
Oats	30 lbs.
Buckwheat	30 lbs.

BY MEASURE

Winter

Wheat	32 qts.
Corn	36 qts.
Oats	30 qts.
Buckwheat	20 qts.

BY WEIGHT

Summer

Wheat	60 lbs.
Corn	60 lbs.
Oats	30 lbs.

BY MEASURE

Summer

Wheat	32 qts.
Corn	36 qts.
Oats	30 qts.

The following mash is fed dry in a hopper kept open during the *afternoon only:*

BY WEIGHT		BY MEASURE	
Winter and Summer		Winter and Summer	
Corn meal	60 lbs.	Corn meal	57 qts.
Wheat middlings	60 lbs.	Wheat middlings	71 qts.
Wheat bran	30 lbs.	Wheat bran	57 qts.
Alfalfa meal	10 lbs.	Alfalfa meal	20 qts.
Oil meal	10 lbs.	Oil meal	8 qts.
Beef scrap	50 lbs.	Beef scrap	43 qts.
Salt	1 lb.	Salt	½ qt.

The fowls should eat about one-half as much mash by weight as whole grain. Regulate the proportion of grain and ground feed by giving a light feeding of grain in the morning and about all they will consume at the afternoon feeding (in time to find grain before dark). In the case of pullets or fowls in heavy laying, restrict both night and morning feeding to induce heavy eating of dry mash, especially in the case of hens. This ration should be supplemented with beets, cabbage, sprouted oats, green clover or other succulent food, unless running on grass covered range. Grit, cracked oyster shell and charcoal should be accessible at all times. Green food should not be fed in a frozen condition. All feed and litter used should be strictly sweet, clean and free from mustiness, mold or decay. Serious losses frequently occur from disease, due to the fowls taking into their bodies, through their intestinal tract or lungs, the spores of the fungus causing molds.

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Circular 83

Canning and Preserving

BY

Mrs. GEORGE C. MONROE
Farmers' Institute Lecturer

Reprint from Bulletin 50

CANNING AND PRESERVING

Mrs. George C. Monroe

Farmers' Institute Lecturer

Some one has figured out that if every boy in the country would eat five apples a day for the next three months it would require all the apples which have been produced in the country this year and would insure a fair price to the grocers.

Another thing about this boy-apple combination is, that it is just as good for the boy as it is for the apple market. Five apples a day will merely keep the boy's digestive organs in good working order.

The common fruits, because of their low nutritive value, are not as a rule estimated at their real worth as food. Fruit and fruit juice supply a great variety of flavors and keep the blood in a healthy condition.

Nowhere is there a greater need of a generous supply of fruit than on the farm, where the diet is apt to be restricted in variety, because of the distance from markets.

The home canning of fruits and vegetables is a matter of more importance to those who grow such products than to those who must buy them. The cost of labor and fuel, added to the cost of the raw materials, make it wiser for many to buy the canned article.

Aside from the value as food for the family is the convenience of canned fruits and vegetables for emergency luncheons. The city woman who can send to the corner grocer need not worry but the woman in the country where the grocer is miles away needs to prepare for times of siege.

The essential points in all canning are few — absolute cleanliness, sterilization and suitable containers, which means the destruction and exclusion of ferments, molds and bacteria.

Over a hundred years ago a Frenchman first made practical application of the methods of preserving food by putting it in bottles or cans, which he hermetically sealed. He then put the full bottles or cans in water and boiled them. At that time and even until recent years it was thought that the oxygen of the air caused the decomposition of food. Scientists have proven that it is not the oxygen which causes fermentation and putrefaction, but bacteria and other small plant growths. So, while Appert's theory of the cause of the spoiling of food was incorrect, yet the world owes him a debt of gratitude since his method of preserving it by sealing and corking was correct.

Bacteria and yeast exist in the air, in the soil and on all vegetable and animal substances. Bacteria are one-celled and so small that they can be seen only by aid of a microscope. In growing this single cell divides forming two cells. This grows on so rapidly that it has been estimated that one single bacterium may produce seventeen million similar growths in twenty-four hours. To grow it is necessary to have moisture, warmth and proper food.

Yeasts which are also one-celled grow less rapidly. A bud develops, breaks off and forms a new yeast plant.

Spoiling of food is caused by the development of bacteria or yeast. Most germs require air to grow, but there is one kind of bacteria that grows without air, and if it is sealed up in a can it spoils the contents of the can.

Bacteria grow best in foods containing nitrogen such as meat, fish, eggs, peas, beans and milk — especially in warm weather. Bacteria do not grow so fast in sweet substances while yeasts develop very rapidly in such. Some vegetable foods contain so much acid that very few bacteria or yeast attack them, as lemons, cranberries and rhubarb.

So it comes about that canned fruits are more commonly spoiled by yeast than bacteria. When fruits are preserved with large amounts of sugar they need not to be hermetically sealed to protect them from bacteria and yeasts, since the thick syrup is not favorable to their growth. However, these are best put up in small self-sealing jars because mold grows freely on moist sugary substances exposed to the air.

Every housekeeper is familiar with molds which during warm and moist weather grow upon all sorts of starchy materials, such as boiled potatoes, bread, mush, etc., as well as fresh canned and preserved fruits. Molds grow from spores which are always floating in the air. When a spore settles on a suitable article of food it sends out a fine thread which branches out and works its way over and into the substance. At first it seems white or light gray and can hardly be seen, but soon the mold becomes colored and, under a microscope, looks like a beautiful flower garden. These spores of mold are light and are blown about by the wind, but they are heavier than air and settle everywhere. If one settles in a glass of preserves or jelly it will soon grow. Molds do not work so freely in canned fruits as raw.

Canning is from all points the most desirable way of caring for fruits, making only enough rich preserves to serve for variety and for special occasions.

There are several methods of canning fruits, as follows:

First, by simply stewing the fruit in an open kettle and then sealing in jars.

Second, by cooking in jars in the oven. Put the raw fruit in jars filled with syrup boiling hot and place jars uncovered in the oven on a sheet of asbestos paper or in a pan with a little water in it; cook about ten minutes. If fruit has settled refill and seal jars.

Tomatoes cooked in the oven are fine. First stew a few tomatoes and strain. Then fill cans with fresh peeled tomatoes, pouring in and filling to overflowing with the stewed tomatoes. Cook uncovered a half hour; refill and seal.

Third, by cooking in jars in a water bath. By this method prepare the fruit and syrup as for cooking in the oven. Fill the sterilized jars and put covers on loosely. Have a wooden rack in bottom of wash boiler and enough warm water to come about four inches above the rack. Place the filled cans on the rack, separating the cans by cloth or ropes, so they will not bump together when the water boils. Cover the boiler and cook fruit ten minutes from the time the water boils. Refill cans with syrup and seal.

In canning vegetables by this method, the process is much longer. We are not able to get a high enough degree of heat to kill the bacteria that cause decay in vegetables on our stoves, so to make up, we need to cook the vegetables in the water bath for three or even four hours. I do not like this way of canning fruits and vegetables for several reasons. The long time necessary to have a very hot fire in one's kitchen, making the room very uncomfortable for doing other work, and the amount of fuel used, as well as the handling of the hot cans.

All things considered I prefer the fireless cooker for canning all vegetables and fruit. For fifteen years I have used a homemade cooker for this purpose.

By this method the fresh fruit is placed in cans, the cans filled to overflowing with boiling syrup and the tops screwed on. After the cans are placed in the compartment of the cooker, boiling water is poured over the cans to cover them and the cooker is fastened up.

In canning vegetables I place the cans after filling with the vegetables, water and some salt, in the steam cooker until the contents are boiling hot; I then put them in the fireless cooker. By this method the cans do not have to be opened to refill; there is no danger from handling hot cans and no extra heat used in the kitchen. It is just as necessary to sterilize every article used in the process as when the other methods are used.

In making preserves, small jelly glasses should be used. The general rule is equal weights of sugar and fruit. We might speak of one method called the "platter" method of preserving, using strawberries for example. Put sugar and berries in layers, having not more than four inches in all in the kettle. Heat slowly to boiling point, boil ten minutes from the time it begins to bubble. Pour this on a platter two or three inches deep and let stand in a sunny window in an unused room three or four days. In that time the fruit will grow plump and firm and the fruit thicken almost to a jelly. Put this preserve cold into jars or tumblers.

In the making of jelly, housekeepers feel less sure than in any other kind of preserving; since a rule that works one year may not the next. That is to say, in a season when there has been a great deal of heat and sunshine there will be more sugar in fruit than in a cold, wet season; consequently a pint of currant juice will require 3/4 of a pint of sugar. But if it is a cold, wet season the pint of currant juice will require a generous pint of sugar.

Jelly sometimes crystallizes from too hard boiling. If syrup boils rapidly the crystals are thrown in the sides of the kettle. If these crystals are stirred into the syrup they are likely to cause the whole mass to crystallize.

Jelly made by the cold process is more delicate than that made by boiling but it does not keep so well.

Jellies are so rich in sugar that bacteria and yeast do not attack them. They must be protected from molds. A thick coating of paraffin makes a good cover but is not quite so safe as the paper dipped in brandy, because the spirits destroy and remove spores that may happen to rest on the jelly. Paraffin may be poured over a brandied paper.

As part of this subject one might include the making of marmalades, fruit juices, syrups and vinegars, all cooling and refreshing aids to digestion when not taken in excess.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 84

UNIVERSITY OF ILLINOIS [illegible]
AUG 21 1915

Modern Appliances in the Home

BY

Mrs. IDA S. HARRINGTON

Farmers' Institute Lecturer

Reprint from Bulletin 50

MODERN APPLIANCES IN THE HOME

Mrs. Ida S. Harrington
Farmers' Institute Lecturer

If there are any two occupations which ought to have the fullest understanding and sympathy for each other, those two occupations are farming and home-making. They have come through the same experience: Both have been undervalued in the past, and both are now achieving the important place which they deserve in the world's economy. Not so many years ago, if a farm boy wanted to invest time and money in education, it meant turning his back upon the farm, for the training at his command took no account of agriculture as a vocation. The work of the farm was left to that brother who was accounted the least ambitious and intelligent one of the family, on the theory that anybody could be a farmer and that, if anything, one could farm better by instinct than by training. Today it is generally recognized that no other line of work requires keener intelligence or wider knowledge than does farming, and therefore men are being educated for the farm instead of away from it. And with education has come pride in the occupation once so generally despised.

In the household the same revolution has taken place. It used to be the rule that a girl who wanted to invest time and money in education turned her back on the field of home-making. She grew farther and farther away from the round of homely duties that made up the life of the sister who remained behind. The home-minded sister, like the farm-minded brother, was accounted less gifted, less worthy of an education, than those who preferred a more showy occupation. In the household, as on the farm, it was held that instinct was a sufficient guide for so humdrum a business.

But just as we are awaking to a sense of the power wielded by a scientific farmer, so we are coming to recognize how far-reaching is the influence of a home-maker who has mastered her profession. If the Emperor of Germany thought that he was belittling women when he said that "women did not, or need not, know how to talk of anything except children, cooking, and church," he was mightily mistaken, for the woman who knows even a part of what there is to be known about children, cooking, and church, has incidentally laid a pretty good foundation for knowledge of every kind. Instead of appreciating this fact, women have accepted sayings like the German Emperor's as proof that home-making was an occupation in which one person could do about as well as another, and that the mere home-maker owed the world an apology for not being engaged in more brilliant pursuits.

A woman I once knew, who had suddenly lost her income, was fortunate enough to be a supremely good cake-maker, so that she was able, by means of this, to earn a comfortable living. But so ashamed was she of her occupation, that if anyone came to call when she had cake in the oven, she would let the cake burn and pretend that the smell came from the neighbor's, rather than admit that she was making an honorable living in an honorable way.

And how was it when the census man came around, and after asking us all the seaching questions at his command about our ancestry, fixed us with an eagle eye and made the final query: "What is your occupation?" Did we not hang our heads and say: "Well, to tell you the truth, I haven't any. I don't do anything. I am only a housekeeper?" Thanks to our changed attitude toward the profession of home-making, I venture to say that when the census man comes around again, those of us who have the right will say proudly in answer to his question: "I am engaged in the most important occupation in the world: I am a home-maker."

Two things are needed to insure the census man's getting this answer wherever he goes: Better appliances, to make work easier, and better-trained housewives to use to better advantage such appliances as they have at hand. Both these conditions will be sooner fulfilled if men give us their cooperation and help. It is to the farm homes that we may look for the solution of the household problem, for where is there a closer partnership between man and wife than on the farm? And to whom can women look with more assurance for the needed cooperation than to the farmer, who has had to struggle against the same odds in his occupation as have women in the occupation of housekeeping? Yet, if you say to a man: "Let your daughter be trained to keep house scientifically," or "Let your wife go away for a few months' study, to get a new viewpoint of the work that has grown to seem only drudgery," is he not apt to say: "Why should my wife or my daughter be trained? I am not at all sure that a house kept by rule is a comfortable place. In such a house, if you come in late to dinner you get black looks, and if you track in a little mud you get a lecture on germs. No, I have no use for trained housekeepers." How long ago was it that many people had exactly that feeling about the hospital-trained nurse? How many times have we heard it said: "I do not want a trained nurse in my house. She cannot adapt herself to conditions. She makes more work than she saves. I have no use for her." Yet we have all learned by this time that the trained nurse who deserves such criticism is an exception. If the objections I have quoted can be truthfully made against training either the housekeeper or the nurse, it must be because a necessary ingredient has been left out of the training: It lacks the salt of common sense. This was well voiced by a woman who was a most successful poultry keeper and who was asked by a writer on poultry topics, whether she followed his methods. Smiling brightly at him, she said: "Yes, we follow your methods mixed with a little common sense." Certainly she hit the nail upon the head. Training without common sense is as powerless as common sense without training.

"But," says another man, "can you train a housekeeper; isn't she born, not made?" How does that theory work out in other professions? The fact that the occasional boy or girl is born with a genius for mathematics does not relieve common folk from laboring over the multiplication table. The fact that here and there a wonderful painting is produced, or a fine piece of music composed, without previous training, does not relieve the rest of us from the laborious straight lines and five-finger exercises with which we begin our artistic careers. Nor does great talent in any of these professions mean that the possessor of the talent will cease to study, but rather that he will be the more eager to learn all that he can about his chosen work. So the woman who is born with a genius for home-making does not prove that women with lesser talent may not be successful through training, study and practice. Nor can she, if she is to keep up with the times, afford to be satisfied without adding to her natural gift the continued study which shall enable her to meet new conditions as they arise, instead of lamenting the passing of old ones.

One of the greatest opportunities open to housekeepers today lies in what the vast majority of them consider an unmixed calamity. I refer to the difficulty, in town and country alike, of finding help. Yet this passing of human helpers is opening the way to perfecting mechanical helps in the household. In the days when help of a sort was plentiful, it was a very natural thing to say: "Yes, I have a helper in my kitchen, and I think I can train her up to a certain point, but I am not going to get her expensive utensils, or try to teach her new and better ways of working, for she would not appreciate the value of either. It is less trouble, on the whole, to let her go along in her old drudging, unimaginative way than to try to lift her out of it." But today, when in most households the wife — her own boss in her own business — does the work, her intelligence and training should very soon enable her to acquire the mechanical turn of mind which is needed to bring successfully to her assistance the so-called "labor saving devices."

The use of machinery calls for brains and courage. You have perhaps all had the experience of advising someone to get a bread-mixer and have been pained, when you called a few days later, to find that the bread-mixer had joined the things on that upper shelf where people put hasty purchases which they wish to forget. In answer to your question as to why the bread mixer was not in use you have probably been told that it did not work just right the first time and that the owner got discouraged and went back to the old way. A machine will no more do its best work at the first trial than will a human helper. It needs to "find itself." It needs to be studied and understood; and for this study and understanding we need the mechanical turn of mind, which women in general do not possess at present to the same degree as men, simply because they have failed to cultivate it, but which an intelligent woman can soon acquire.

Two or three years ago I visited a large spice factory in New England, widely known not only for the excellence of its product, but for the care given to its employees. We watched, with deep interest, the ease with which the machines did the work, and the apparent leisure of the young women whose only business seemed to be to keep the machines up to their work by a deft touch here and there. When we thought we had seen the entire plant, our guide opened a door at one side and took us into a room with a long table running down the center. Around it were seated a dozen or two of women fifty and sixty years old, each of them with a pasteboard box in one hand and a metal scoop in the other, slowly and laboriously filling by hand counterparts of the boxes which the machines in the other room were filling so rapidly and accurately. I turned to our guide and asked him: "Who are those women and what place has this room in your up-to-date factory?" He said: "Those are women who have worked for us for twenty years, some of them longer. There is something lacking in their mental make-up which renders it impossible for them ever to learn the use of machinery, but we are not turning them away on that account. We are letting them go on in their same infinitely slow, dull way until the time comes when they themselves are ready to quit work." It was a pleasant thought that a great big money-making concern should take such individual thought for its workers, but a very startling one that every one of us, by failing to develop the faculty of utilizing the helps at our command might drudge our way through life in a way similar to those poor women.

We have centuries of tradition to overcome before we can achieve a man's scorn of poor tools. We must learn to look at our workshops with men's eyes. I venture to say that if we all had the courage to go away for a three months' vacation, leaving the men in charge of our kitchens, that while at the end of the first month things might look "like sixty," at the end of the second month they would begin to improve, and if our courage still held out and we stayed the third month, we should come home to find many things changed for the better. They might look strange and queer, but there is no doubt that in every instance we should find labor-saving devices installed which men never dreamed we needed, until they themselves tried to work without them. It is said that the reason why women are slow in adopting modern appliances is that they are too conservative. I think a truer reason is that through our lack of mechanical training we have bought this or that piece of machinery without realizing that its care would make more work than the machine could save, and like the "burned child," we have "shunned the fire" ever since. It is so easy for a person whose business it is to sell articles of this kind to tell us nothing but the truth and yet to withhold a part of the whole truth. Until very recently the dish-washing machine was a case in point. It could truthfully be said of this or that make, that it was easy to clean, practical, simple, and that a child could run it, and to suppress the fact that while it might pay for a family of one hundred, it would not be a good investment for the average household.

The mechanical turn of mind, then, is the first requisite toward solving the problem. In every community there are women who have it and who could supplement the work of the Good Housekeeping Institute and like organizations in trying out new household devices as they are manufactured, not once or twice, but the half-dozen or even score of times which might be necessary to save the rest of us from buying in haste and repenting at leisure, on the one hand; or from denying ourselves an indispensable help, on the other hand.

The objection of expense arises too often like a dragon when we think of this or that labor-saving device which might entirely change our lives. We are hindered by the thought that unless we individually can own a thing we must therefore deny ourselves the use of it. Compare our attitude in this regard with the man's. How many men would think that just because they cannot afford personally to own and give house-room to a threshing machine, that they must therefore go back to the days of hand-threshing? And yet how many communities are there where the women jointly own or contract for the services of a great big vacuum cleaner, which shall drive up to the house at stated intervals, poke its competent nozzle within, and free our houses so completely of dust that we need not fear the eyes of critical neighbors for months to come? So much of the dust in our households in composed of that which hid under beds and bureaus when we thought we had captured it in "that painful process of house-cleaning associated by men with loose tacks, strong language and colds in the head." We think we have destroyed every particle of dust, only to discover a week later that the rooms are again dusty. But supposing that the vacuum cleaner which would do away with this is at present entirely beyond our means, do we therefore need to settle back and say that we are forever doomed to the corn broom and dust-pan? Can we not get much needed help from some of the smaller vacuum cleaners, or a vacuum sweeper or, failing even that, from a long-handled dust-pan, which would make it unnecessary to stoop over? Again, is the threshing machine any easier to acquire than some of the pieces of laundry machinery which would make "blue Monday" only half blue? And is not a neighborhood laundry, where such machinery could be used by different families in the neighborhood, in turn, something which could be carried out if we were all determined on it?

But while waiting for the big helps, let us not scorn the lesser ones in laundry work as in cleaning. The washing machine has made its way more successfully than most of our labor-saving devices, but how often do we see the mangle, either heated or unheated, or the alcohol, or gasoline flat iron where the electric iron is impossible? How many people make an improvised mangle out of their clothes wringer?

With the necessary mechanical turn of mind we can take our equipment just as it stands and make it more useful than it ever has been. The woman who discovered that a wire hairpin would make just as good a cherry stoner as any you can buy for ten or twenty-five cents, had the necessary imagination to make the most of any utensil at her command. Such a woman would not hesitate, either, to press into service whatever would be of use, whether it was originally intended for the kitchen or not. For instance, she might go to the owner of a boat and ask him how he managed to get his decks so white and clean, adding: "I can't get my kitchen floor to look like that unless I get down on my hands and knees. Do you get down on your hands and knees to scrub your decks?" And he says "No," very emphatically, and shows her a deck brush — a scrubbing brush with a long handle, which solves her problem just as well as if it had been designed purposely for the kitchen floor. This woman, after many vain efforts to get, for the greasing of her pans, a brush which should be positively warranted not to shed its bristles and to withstand the hot water necessary to cleanse it, spies on her son's bureau one day, just what she has been looking for — a brush of badger hair, bound with twine, warranted to withstand hot water. The fact that it is his first and cherished shaving brush keeps her from annexing it, but she goes straightway and buys one just like it in preference to any so-called "pastry brush." One day, after vainly struggling to free the lemon grater from the grated rind, she picks up a little fibre brush and discovers that one light stroke does what fifteen minutes' labor with a knife did not accomplish. She learns of the artist how useful is the palette knife — more effective for the cleansing of bowls than anything except the human finger, which has been discarded for the purpose since we began to study sanitation. She finds the roll of brown paper just as useful in the kitchen as it is in the shop, and has allowed it largely to replace the rolling board, which required such careful cleansing. At the druggist's one day she discovered what is known as an emulsifier — a deep porcelain bowl with a beater like a Dover egg beater fastened to it somewhat aslant, which may be turned by hand or by a motor. While never intended for the kitchen, this utensil serves her better for the beating of cakes and frostings and the mixings of salad dressings than anything manufactured for the purpose.

Those whose business it is to sell kitchen appliances, naturally find it to their advantage if we buy a great variety of utensils, each designed for some special use. That same mechanical turn of mind which I have mentioned so often will save us much money right here by making us realize to how many uses an appliance may be put besides the one for which it was specially designed. When you have decided that the bread mixer saves your time and is practical, and have therefore added a cake mixer to your equipment, do not imagine that the mixing of cake is all that it can do. It makes salad dressing, beats eggs, makes butter and kneads bread with equal readiness and quite as effectively as if each one was its specialty. A scrap basket has long been advocated as a useful and necessary piece of kitchen furniture, but until you have tried setting aside a new scrap basket for the purpose of crisping your lettuce, you will not have realized its full usefulness. It makes us so far independent of a refrigerator, for after the lettuce is sprinkled with fresh cool water in the basket and set in the cellar, the basket reeds hold just enough moisture to put the lettuce into excellent condition. A fireless cooker is no less useful for canning fruits than for cooking cereals or raising bread. The list of means for making our work easier might be multiplied indefinitely if we are only on the lookout for them.

The question arises, what is the possession of labor-saving devices and our knowledge of their use going to do for us? One man has said: "If the time gained by labor-saving devices is to be spent by women in still multiplying the same round of duties, in spending more hours doing more of the same kind of work, then the labor-saving devices had better be at the bottom of the sea." Their real object is to enable the housewife, by shortening her working day, to give her family and community, not the dregs of an over-weary body and brain, but the hopeful, inspiring influence on which the uplift of every home and community depends. Relief from a part of the manual drudgery of housekeeping sets her free to taste the joys of her profession, homemaking.

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OF THE
UNIVERSITY OF ILLINOIS

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 85

Some Results of Cow Testing Work

BY

A. J. NICOLL
Farmers' Institute Lecturer

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SOME RESULTS OF COW TESTING WORK

A. J. Nicoll,

Farmers' Institute Lecturer

The average production of milk and butter fat of the cows of New York State is so low that after the cost of production is deducted, no profit is left for the owner. The dairy farmer works as long hours and renders as faithful service as men engaged in any other business and is entitled to a reasonable compensation for his work.

In order to have this, he must either increase the production of milk and butter fat of his cows or the price at which the product is sold. The selling price, although often fixed by the party to whom the product is sold, is largely controlled by the great law of "supply and demand." Many dairymen forget that the easiest way to increase the profit from the herd is to lower the cost of production by increasing the quantity of milk and butter fat produced by the individual cow. In order to do this the dairymen should know the yearly production in milk and fat of each cow in the herd. Since very few farmers are keeping records of their cows, the Department has been organizing cow testing associations in which a competent man is employed to keep a record of the herd.

In order to form a cow testing association, the dairymen of a neighborhood meet and organize by the election of the president, vice-president, secretary, treasurer and two directors. The officers then engage a man to act as official tester and take charge of the work of the association. The Department lends its aid in organizing associations and securing testers to take charge of them, and will supply all blanks needed. The Department has supervision of the work of all associations in the state. The testers are receiving from $40 to $50 per month and board, according to the size of the association.

Twenty dairies with 712 cows were selected at random from the Delhi and Bovina Associations in Delaware county and the following data made to demonstrate the possibility of improving the herds of the state by careful selection and breeding.

The records show that as there was an increase in the production of butter fat by the selection of the best ten and the best cow, there was a like increase in the milk production. The average production per cow of the best ten cows in each herd was an increase of 884 pounds of milk and 90 pounds of fat over the average of the entire herds. The selection of the best cow in each herd brought this average up still more — 1,182 pounds milk and 50 pounds of fat, or 2,066 pounds more milk and 140 pounds more fat than the average production of the herds. If the twenty herds had been as good as the best ten cows in each herd, the profit over feed would have been increased $19,402 for the year or $27.25 per cow. Could the herds be brought to equal the best cow in each herd, the profit over feed would be $33,777.28 more than the return of the entire herds. This would more than double the profit.

If the twenty herds were composed of cows as good and as well fed and cared for as the best five cows, the profits, after paying for feed, would be $48,786.24 more than the profits of the entire herds, or an increase of $68.52 per cow; more than two and one-half times the average production of the herds.

In the associations from which these records are taken, hay is charged at $10 per ton in the barn, and pasture at thirty cents per week per cow. Grain is charged at the actual price paid by the owner. All herds are charged the same price for roughage and pasture.

	Average Per Cow					Profit over feed, 20 herds, 712 cows
	Milk	Fat	Value	Cost of feed	Profit over feed	
HERD No. 1						
Thirty-five cows	4,732	258.8	$94 64	$46 36	$48 28	$1,689 80
Best ten	7,365	365.9	147 20	58 51	88 69	
Best cow	8,977	415.5	179 50	68 31	111 19	
HERD No. 2						
Forty-one cows	4,584	224.	87 45	35 50	51 95	1,829 82
Best ten	6,218	297.9	117 80	43 69	74 11	
Best cow	5,948	342.	138 10	47 22	90 88	
HERD No. 3						
Twenty-nine cows	3,911	183.7	76 99	41 03	35 96	1,123 66
Best ten	5,453	256.2	108 16	48 16	59 99	
Best cow	5,690	281.2	115 71	48 44	67 27	
HERD No. 4						
Twenty-nine cows	4,141	195.96	72 85	35 68	37 17	1,073 89
Best ten	5,173	249.6	93 74	41 83	51 91	
Best cow	7,218	268.6	105 81	46 42	59 39	
HERD No. 5						
Forty-six cows	4,196	198.46	76 17	39 32	36 85	1,695 17
Best ten	6,841	324.9	126 25	56 66	69 59	
Best cow	8,627	388.5	147 19	56 65	90 54	
HERD No. 6						
Thirty-eight cows	5,393	201.79	80 19	42 96	37 23	1,414 69
Best ten	7,278	273.6	109 36	51 19	57 17	
Best cow	9,737	353.7	140 87	55 89	84 98	
HERD No. 7						
Twenty-nine cows	4,268	202.55	73 01	31 34	41 67	1,208 12
Best ten	5,146	236.	92 73	36 28	56 45	
Best cow	6,414	290.19	110 93	36 69	74 24	
HERD No. 8						
Twenty-nine cows	4,843	237.60	88 45	36 21	52 24	1,525 09
Best ten	6,096	288.07	109 52	45 35	64 17	
Best cow	6,755	324.61	125 57	46 60	78 97	
HERD No. 9						
Fifty-one cows	4,478	219.4	87 20	40 02	47 18	2,406 19
Best ten	6,859	323.04	129 33	49 59	79 74	
Best cow	7,523	367.7	150 76	56 34	94 42	
HERD No. 10						
Thirty-nine cows	4,905	238.99	91 17	35 62	55 55	2,172 51
Best ten	7,301	361.72	133 22	45 98	87 24	
Best cow	8,920	415.16	163 42	50 40	113 02	

	AVERAGE PER COW					Profit over feed, 20 herds, 712 cows
	Milk	Fat	Value	Cost of feed	Profit over feed	
HERD No. 11						
Thirty-nine cows	3,766	184.86	$67 67	$39 09	$34 56	$1,358 86
Best ten	4,852	244.17	92 16	42 28	49 88	
Best cow	5,679	285.08	105 52	40 68	64 84	
HERD No. 12						
Forty-six cows	3,277	151.	56 93	27 79	29 14	1,340 29
Best ten	6,311	286.94	110 46	44 90	65 56	
Best cow	8,029	333.05	133 88	51 91	81 97	
HERD No. 13						
Thirty-eight cows	4,451	222.66	82 91	36 74	46 17	1,754 45
Best ten	6,092	314.71	116 57	45 37	71 20	
Best cow	7,065	358.58	132 04	45 63	86 41	
HERD No. 14						
Thirty-two cows	5,223	240.73	93 75	40 46	53 29	1,705 31
Best ten	6,747	329.33	129 87	49 62	80 25	
Best cow	7,375	413.83	170 49	50 90	119 59	
HERD No. 15						
Twenty-five cows	3,759	148.51	63 72	30 24	33 48	837 67
Best ten	5,452	216.77	97 64	39 15	57 49	
Best cow	8,312	288.62	146 15	48 16	97 99	
HERD No. 16						
Thirty-three cows	4,479	211.80	87 67	38 89	48 78	1,609 74
Best ten	6,599	307.17	128 93	49 54	79 39	
Best cow	9,000	379.05	156 86	52 97	103 89	
HERD No. 17						
Thirty-five cows	4,609	208.81	81 71	35 03	46 68	1,633 68
Best ten	6,642	287.46	113 38	44 23	69 15	
Best cow	5,156	306.16	119 69	38 35	81 34	
HERD No. 18						
Twenty-six cows	4,298	221.87	91 64	36 19	55 45	1,441 66
Best ten	6,216	312.93	130 10	47 19	82 91	
Best cow	8,137	385.36	158 79	49 18	109 61	
HERD No. 19						
Thirty-two cows	5,330	249.50	104 42	39 81	64 61	2,067 44
Best ten	6,945	338.21	141 94	47 62	94 32	
Best cow	8,080	371.82	158 17	51 03	107 14	
HERD No. 20						
Forty cows	3,533	164.66	67 18	26 55	40 63	1,625 14
Best ten	5,488	265.88	108 37	36 03	72 33	
Best cow	6,169	310.77	127 48	40 40	87 08	

TOTAL PRODUCTION

	Milk	Fat	Value	Profit over feed
Twenty herds, 712 cows....	3,128,575	145,711	$57,678 67	$30,585 18
Average..................	4,374	204.6	81 00	42 94
200 cows, best ten in each herd..................	1,251,724	58,802	23,368 19	14,034 74
Average..................	6,258	294	116 84	70 19
Twenty cows, best cow in each herd..............	148,810	6,880	2,786 93	1,807 76
Average..................	7,440	344.4	139 34	90 38
Average, best five cows.....	8,481.6	401.87	165 81	111 46

NET INCOME OF DAIRY 10 AND DAIRY 15

Entire Dairy Best Ten Cows and Best Cow

	Total for Year		Total Best Ten Cows		Best Cow	
	dairy 10	dairy 15	dairy 10	dairy 15	dairy 10	dairy 15
	39 cows	25 cows	Best 10	Best 10		
Pounds milk.......	191,314	92,993	73,017	54,525	8,920	8,312
Average...........	4,905	3,719	7,301	5,452	......	....
Pounds fat.........	9,320	3,712	3,617	2,167	415	288
Average...........	239	148	361	216	......	....
Value of product....	$3,565 64	$1,593 78	$1,332 22	$976 40	$163 40	$146 15
Average...........	91 43	63 75	133 22	97 64	......	....
Profit over feed.....	2,172 51	837 67	872 40	574 86	113 02	97 99
Average...........	55 60	33 50	87 24	57 48	......	....

Total and Average Production of Poorest Twenty-nine in Herd 10, and Poorest Fifteen in Herd 15

	Milk	Fat	Value	Profit over feed
Poorest twenty-nine in herd 10.	118,297	5,703	$2,233 42	$1,300 11
Average....................	4,079	196	77 01	44 83
Poorest fifteen in herd 15.....	38,468	1,545	617 38	262 81
Average....................	2,364	103	41 15	17 52

FORM OF CONSTITUTION AND BY-LAWS FOR A COW-TESTING ASSOCIATION

1. This association shall be known as the .... Cow-Testing Association.

2. The officers shall consist of a president, vice-president, secretary and treasurer and two directors.

3. The officers shall be elected by the members at the annual meeting of the association and shall hold office for one year or until their successors are chosen.

4. The officers shall constitute an executive committee which shall have charge of the affairs of the association.

5. The annual meeting shall be held on the ...... day of .... at ....

6. Special meetings may be at such time and place as shall be designated by the executive committee.

7. An official tester shall be employed by the executive committee and shall be under its general direction and responsible to it.

8. No member shall withdraw from the association during the year for which he agreed to join and each member shall pay a membership fee of $1 for the purpose of the organization.

9. New members may be admitted at any time upon the vote of the association.

10. These articles may be altered or amended at any regularly called meeting of the association provided two weeks' notice is given in writing to each member by the Secretary of the Association.

FORM OF AGREEMENT FOR A COW-TESTING ASSOCIATION

Whereas, It is proposed to organize a cow-testing association to be known as the .... Cow-Testing Association or some other suitable name, for the purpose of keeping records and making butter fat tests of the cows of its members, and

Whereas, It is proposed to engage a suitable person for that purpose as soon as enough subscriptions are obtained to meet the expense,

Therefore, The undersigned each agrees to pay the sum of $.... per day or $.... per cow, besides board and lodging for the tester and his horse at least one day in each month, while such tester is engaged in the work of testing the dairy of each subscriber. The tester shall not work on Sundays, but shall have board and lodging for himself and horse at the place where he worked on Saturday. This agreement is not to become binding or operative until at least enough subscribers are obtained to keep the tester employed twenty-five days.

Note.— The words "per day" or "per cow" can be omitted according to the plan of the organization.

830.7
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STATE OF NEW YORK
Department of Agriculture

Calvin J. Huson, Commissioner

BUREAU OF FARMERS' INSTITUTES

Edward van Alstyne, Director

CIRCULAR 86

List of Places, Dates, Conductors, and Local Correspondents for Farmers' Institutes to be held in New York State—Season 1913-1914

UNIVERSITY OF ILLINOIS
AUG 21 1915

COUNTY	PLACE	DATE	
Albany	Altamont	Dec. 11, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, W. D. Fredericks, Guilderland Center.
	Coeymans Hollow	Dec. 5–6, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, Fred McCarty, Coeymans Hollow.
	East Berne	Dec. 10, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, H. A. Gallup, Altamont.
	Latham	Dec. 13, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, J. M. Gaffers, Latham.
	South Westerlo	Dec. 4, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, Sheridan Palmer, Greenville, R. D.
Allegany	Almond	Feb. 12, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, I. D. Karr, Almond.
	Belmont	Feb. 13–14, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, F. M. Carpenter, Belmont.
	Black Creek	Feb. 6–7, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Floyd D. Stowell, Black Creek.
	Hume	Feb. 12, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, A. D. Vedder, Fillmore.
	Wellsville	Feb. 16, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, E. W. Barnes, Wellsville.
	West Clarksville	Feb. 9, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, S. S. Lane, Friendship, R. D. 3.
Broome	Chenango Forks	Mar. 11, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, C. E. Brown, Chenango Forks.
	Harpursville	Mar. 4, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Rev. Jos. T. Curtin, Nineveh.
	Maine	Mar. 2, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, D. W. Young, Union, R. D. 2.
	Vestal	Dec. 13, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Lewis Haight, Vestal, R. D.

COUNTY	PLACE	DATE	
Broome...... (*Cont.*)	Whitneys Point...	Mar. *11-12, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, F. C. Branday, Whitr Point.
	Windsor..........	Mar. 5, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, F. M. Philley, Windsor.
Cattaraugus..	Conewango.......	Jan. 22, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Mrs. Lucy Gardner, Conewango.
	Gowanda.........	Jan. 19, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, L. R. Simons, Gowanda.
	Ischua...........	Feb. 11, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, E. N. Williams, Ischua.
	Machias..........	Feb. 10, 1914	*In charge*, R. P. McPherson *Local Correspondent*, C. H. Murphy, Machias.
	Napoli...........	Feb. 4–5, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, C. E. Van Aken, Little Valley, R. D. 2.
	Perrysburg.......	Jan. 20, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, John W. Hall, Perrysburg.
	West Valley......	Jan. 14, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, A. H. Mathewson, West Valley.
Cayuga......	Auburn..........	Feb. 28, 1914	*In charge*, John H. Barron. *Local Correspondent*, A. J. Parker, Auburn.
	Conquest.........	Jan. 14, 1914	*In charge*, D. P. Witter. *Local Correspondent*, E. S. Wilcox, Port Byron, R. D. 39.
	Dresserville.......	Jan. 29, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, Ray R. Lawrence, Moravia, R. D. 16.
	East Venice.......	Mar. 2, 1914	*In charge*, John H. Barron. *Local Correspondent*, C. E. Stanton, Moravia, R. D. 18.
	Fair Haven.......	Jan. 12, 1914	*In charge*, D. P. Witter. *Local Correspondent*, M. C. Turner, Fair Haven.
	Five Corners......	Mar. 3, 1914	*In charge*, John H. Barron. *Local Correspondent*, Walter Hunt, Atwater.
	Locke............	Jan. 28, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, I. J. Main, Locke.
	Sherwood.........	Jan. 26, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, C. H. Cook, Poplar Ridge.
	Victory..........	Jan. 13, 1914	*In charge*, D. P. Witter. *Local Correspondent*, G. T. Brackett, Red Creek, R. D. 54.
	Weedsport........	Jan. 15, 1914	*In charge*, D. P. Witter. *Local Correspondent*, A. M. Pierce, Jordan.
Chautauqua..	Brocton..........	Jan. 30–31, 1914	*In charge*, R. P. McPherson. *Local Correspondent* C. R. Berger, Portland.
	Busti............	Feb. 3, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, J. W. Sanbury, Jamestown, R. D. 79.
	Cherry Creek.....	Jan. 21, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Gerry H. Wilcox, Cherry Creek.

COUNTY	PLACE	DATE	
Chautauqua.. (*Cont.*)	Clymer...........	Jan. 26, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, John F. Costello, Clymer.
	Ellington.........	Jan. 23, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, L. G. Brainard, Ellington.
	Findley Lake.....	Jan. 28, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. L. Nuttall, Findley Lake.
	Frewsburg........	Jan. 24, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Miss Brendice Little, Frewsburg, R. D.
	Mayville.........	Feb. 2, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Miss Addie Dinsbier, Mayville.
	Panama..........	Nov. 19, 1913	*In charge*, D. P. Witter. *Local Correspondent*, C. G. Tripp, Ashville.
	Sherman.........	Jan. 27, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Mrs. May Whitney, Sherman.
	Sinclairville.......	Nov. 20, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Clinton Edson, Sinclairville.
	Stedman.........	Jan. 29, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, G. G. Swart, Ashville.
	Stockton.........	Nov. 21–22 1913	*In charge*, D. P. Witter. *Local Correspondent*, J. A. Woodward, Stockton.
Chemung.....	Big Flats.........	Feb. 6, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Fred Havens, Big Flats.
	Erin.............	Feb. 24, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, E. E. Welton, Erin, R. D. 2.
	Hicks............	Feb. 25, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, F. J. Tillman, Erin, R. D. 2.
	Horseheads.......	Feb. 7, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Clifford Shappee, Horseheads, R. D. 3.
	Millport..........	Feb. 4, 1914	*In charge*, D. P. Witter. *Local Correspondent*, B. J. Parsons, Horseheads, R. D. 2.
Chenango....	Afton............	Dec. 1, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Fred Church, Afton.
	Coventry.........	Mar. 9, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, F. A. Kelley, Coventry.
	Oxford...........	Mar. 6–7, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. D. Harrington, Oxford.
	Smithville Flats...	Mar. 10, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Elwyn H. Skillman, Smithville Flats.
	Smyrna..........	Dec. 15, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Albert G. Ladd, Smyrna.
	South New Berlin.	Dec. 20, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, L. E. Wheeler, South New Berlin.
Clinton......	Churubusco.......	Dec. 18, 1913	*In charge*, John H. Barron. *Local Correspondent*, Charles Stevens, Clinton Mills.

COUNTY	PLACE	DATE	
Clinton....... (*Cont.*)	Ellenburg Center..	Dec. 17, 1913	*In charge*, John H. Barron. *Local Correspondent*, Dayton Hutchins, El burg Center.
	Mooers...........	Dec. 16, 1913	*In charge*, John H. Barron. *Local Correspondent*, Henry Gilbert, Mooers.
	Morrisonville.....	Dec. 8, 1913	*In charge*, John H. Barron. *Local Correspondent*, W. H. Banker, Plattsburg, R. D. 4.
	Saranac..........	Dec. 9, 1913	*In charge*, John H. Barron. *Local Correspondent*, Mrs. C. H. Cane, Saranac.
	West Chazy......	Dec. 15, 1913	*In charge*, John H. Barron. *Local Correspondent*, R. E. Slosson, West Chazy.
Columbia.....	Claverack........	Jan. 13, 1914	*In charge*, John H. Barron. *Local Correspondent*, Homer J. Miller, Claverack.
	Copake..........	Feb. 26, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. W. Scott, Copake.
	East Chatham....	Jan. 5, 1914	*In charge*, John H. Barron. *Local Correspondent*, Ray R. Lant, East Chatham.
	Germantown......	Jan. 15, 1914	*In charge*, John H. Barron. *Local Correspondent*, Henry Fingar, Germantown.
	Livingston........	Jan. 14, 1914	*In charge*, John H. Barron. *Local Correspondent*, Luther M. Myers, Hudson.
	Mellenville.......	Jan. 12, 1914	*In charge*, John H. Barron. *Local Correspondent*, Ed. L. Harder, Philmont.
	Spencertown......	Jan. 6, 1914	*In charge*, John H. Barron. *Local Correspondent*, C. S. Davenport, Chatham, R. D.
Cortland.....	Cincinnatus.......	Feb. 2, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. L. Cook, Cincinnatus.
	Cortland.........	Jan. 30–31, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. J. Sears, Cortland.
	Freetown Corners.	Feb. 6, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Myron Merrihew, Marathon, R. D. 3.
	Homer...........	Feb. 7, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, E. L. Hull, Homer, R. D. 1.
	Marathon........	Feb. 5, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Mrs. A. L. Hunt, Marathon.
	Preble...........	Feb. 9, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, M. S. Nye, Preble.
	Texas Valley......	Feb. 4, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Richard Phalen, Marathon.
	Willett...........	Feb. 3, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Harry B. Coates, Wil
Delaware.....	Andes............	Dec. 4, 1913	*In charge*, D. P. Witter. *Local Correspondent*, A. M. Kling, Andes.
	East Meredith....	Dec. 2, 1913	*In charge*, D. P. Witter. *Local Correspondent*, E. E. Stebbins, East Meredith.
	Franklin.........	Dec. 23, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Arthur W. Rowell, Franklin, R. D. 1.

COUNTY	PLACE	DATE	
Delaware..... (*Cont.*)	Halcottsville......	Dec. 5–6, 1913	*In charge*, D. P. Witter. *Local Correspondent*, W. B. Vermilya, Halcottsville.
	Hobart...........	Dec. 3, 1913	*In charge*, D. P. Witter. *Local Correspondent*, John A. Mihalco, Hobart.
	Sidney Center.....	Mar. 2–3, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Arthur Rutenber, Sidney Center.
Dutchess.....	Amenia..........	Jan. 28, 1914	*In charge*, John H. Barron. *Local Correspondent*, H. Mygatt, Amenia.
	Clinton Corners...	Jan. 23–24, 1914	*In charge*, John H. Barron. *Local Correspondent*, M. E. Knapp, Millbrook.
	Freedom Plains...	Jan. 26, 1914	*In charge*, John H. Barron. *Local Correspondent*, James Skidmore, Pleasant Valley.
	Myers Corners....	Jan. 22, 1914	*In charge*, John H. Barron. *Local Correspondent*, Oscar R. Widmer, Wappingers Falls.
	Upper Red Hook..	Jan. 16, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. A. Fraleigh, Red Hook.
	Wiccopee.........	Jan. 21, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. S. Warren, Hopewell Junction.
Erie.........	Clarence Center...	Jan. 9–10, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, G. D. Carman, Clarence Center.
	East Aurora......	Jan. 17, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Mrs. Frank Ball, East Aurora.
	Hamburg.........	Jan. 12, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, J. S. Newton, Hamburg.
	Lancaster.........	Jan. 7, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Henry H. Dann, Lancaster.
	Marilla...........	Jan. 6, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, O. D. Tiffany, Marilla.
	Sardinia..........	Jan. 16, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. A. Briggs, Chaffee.
	South Wales......	Jan. 15, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Austin Sleeper, South Wales.
	Springville........	Jan. 13, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, L. I. Clark, Springville.
Essex........	Crown Point......	Dec. 5, 1913	*In charge*, John H. Barron. *Local Correspondent*, W. S. Green, Crown Point.
	Jay..............	Dec. 11, 1913	*In charge*, John H. Barron. *Local Correspondent*, Mrs. Anna S. Kent, Jay.
	Keeseville........	Dec. 12–13, 1913	*In charge*, John H. Barron. *Local Correspondent*, Oliver A. Wolcott, Keeseville.
	Lake Placid.......	Dec. 10, 1913	*In charge*, John H. Barron. *Local Correspondent*, C. A. Goff, Cascade.
	Reber............	Dec. 6, 1913	*In charge*, John H. Barron. *Local Correspondent*, E. M. West, Reber.

COUNTY	PLACE	DATE	
Essex (*Cont.*)	Ticonderoga	Dec. 4, 1913	*In charge*, John H. Barron. *Local Correspondent*, W. G. Wicker, Tic deroga.
Franklin	Bombay	Jan. 19, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Geo. Rockwood, Bombay.
	Burke	Dec. 19, 1913	*In charge*, John H. Barron. *Local Correspondent*, A. J. Moe, Burke.
	Dickinson Center	Jan. 20, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Floyd Elmer, Dickinson Center.
	Fort Covington	Dec. 23, 1913	*In charge*, John H. Barron. *Local Correspondent*, Mrs. M. P. Merrick, Ft. Covington.
	Gabriels	Dec. 22, 1913	*In charge*, John H. Barron. *Local Correspondent*, J. J. Fitz Gerald, Harrietstown.
	Malone	Dec. 20, 1913	*In charge*, John H. Barron. *Local Correspondent*, L. L. Foote, Malone.
	Moira	Jan. 17, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Timothy O'Connell, Moira.
Genesee	Alexander	Mar. 3, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Earl Kidder, Alexander.
	Batavia	Feb. 28, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Elbert Call, Batavia.
	Bethany	Mar. 12, 1914	*In charge*, D. P. Witter. *Local Correspondent*, J. W. Burke, Bethany, R. D.
	Byron	Feb. 27, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Thomas Roach, Byron.
	Corfu	Mar. 2, 1914	*In charge*, D. P. Witter. *Local Correspondent*, C. D. Silliman, Corfu.
	Elba	Feb. 25, 1914	*In charge*, D. P. Witter. *Local Correspondent*, J. S. Wilford, Elba.
	Fort Hill	Mar. 7, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, D. J. Rennegar, Le Roy, R. D.
	Oakfield	Feb. 24, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Bryant Taylor, Batavia, R. D.
	Pavilion Center	Mar. 11, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Robert Bradley, Pavilion.
Greene	Freehold	Dec. 2, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, R. T. Story, Freehold.
	Leeds	Dec. 1, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, D. J. Hamm, Leeds.
	Oak Hill	Dec. 3, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, Chas. W. Newman, Oak Hill.
	Prattsville	Dec. 3, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Elmer Krieger, Prattsville.
	West Coxsackie	Feb. 11, 1914	*In charge*, John H. Barron. *Local Correspondent*, F. W. Cole, Coxsackie, R. D.

COUNTY	PLACE	DATE	
kimer.....	Dolgeville........	Feb. 3, 1914	*In charge*, John H. Barron. *Local Correspondent*, Arthur J. Dunckel, Dolgeville.
	Frankfort........	Feb. 23, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. S. Seaman, Frankfort.
	Jordanville.......	Feb. 24, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, John L. Paine, Mohawk, R. D.
	Millers Mills......	Feb. 25, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Dr. C. D. Huxtable, Millers Mills.
	Norway..........	Dec. 1, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, John G. Frank, Newport.
	Ohio.............	Dec. 3, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, Eugene Hemstreet, Cold Brook, R. D.
	Russia...........	Dec. 2, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, W. H. Hughes, Barneveld, R. D.
Jefferson.....	Adams Center.....	Dec. 15, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, B. L. Hunt, Adams Center.
	Belleville.........	Dec. 16, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, W. S. Martin, Belleville.
	Carthage.........	Dec. 10, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, E. G. Lewis, Carthage.
	Clayton..........	Jan. 8, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, George Daniels, Clayton.
	De Pauville........	Jan. 7, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Adam Dorr, De Pauville.
	Dexter...........	Jan. 5, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Fred E. George, Limerick.
	Mannsville.......	Dec. 17, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, J. W. Smith, Mannsville.
	Natural Bridge....	Dec. 8, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, E. H. Allen, Natural Bridge.
	Philadelphia......	Jan. 9, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Geo. A. Hardy, Plessis.
	Plessis...........	Jan. *9–10, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. H. Rowell, La Fargeville, R. D.
	South Rutland....	Dec. 11, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, H. S. Todd, East Rodman.
	Three Mile Bay...	Jan. 6, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Geo. E. Herrick, Three Mile Bay.
is........	Barnes Corners....	Dec. 12–13, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, Herbert H. Greene, Copenhagen, R. D. 3.
	Beaver Falls......	Dec. 5–6, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, H. J. Maurer, Castorland, R. D. 2.
	Constableville.....	Dec. 4, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, Oscar C. Thayer, Constableville.

COUNTY	PLACE	DATE	
Lewis (*Cont.*)	West Leyden	Nov. 22, 1913	*In charge,* A. J. Nicoll. *Local Correspondent,* Fred P. Grubel, W Leyden.
Livingston	Caledonia	Jan. 16–17, 1914	*In charge,* Geo. A. Smith. *Local Correspondent,* Mrs. A. B. Johnson, Caledonia.
	Conesus	Jan. 15, 1914	*In charge,* Geo. A. Smith. *Local Correspondent,* Chas. McGinty, Conesus.
	Dansville (Farmers' Days)	Mar. 4–5–6, 1914	*In charge,* Edward van Alstyne. *Correspondents :* Livingston Co.— J. M. Foster, Dansville. Allegany Co.—F. C. Smith, Wellsville. Steuben Co.—E. F. Gleason, Hammondsport. Wyoming Co.—W. L. Markham, Perry. Wyoming Co.— S. L. Strivings, Castile.
	Greigsville	Feb. 10, 1914	*In charge,* Wm. Hotaling. *Local Correspondent,* E. W. De Graff, Greigsville.
	Linwood	Feb. 9, 1914	*In charge,* Wm. Hotaling. *Local Correspondent,* P. R. Carmichael, Linwood.
	Sparta Center	Feb. 11, 1914	*In charge,* Wm. Hotaling. *Local Correspondent,* Rev. John E. Manning, Dansville.
	Springwater	Jan. 14, 1914	*In charge,* Geo. A. Smith. *Local Correspondent,* Scott Swarts, Springwater.
Madison	Brookfield	Feb. 26–27, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* C. W. Camanga, West Edmeston, R. D.
	Canastota	Jan. 26, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* T. G. New, Canastota.
	De Ruyter	Jan. 29, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* G. B. Burdick, DeRuyter.
	Earlville	Dec. 22–23, 1913	*In charge,* D. P. Witter. *Local Correspondent,* N. M. Congdon, Earlville.
	Erieville	Jan. 27, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* P. H. Brown, Erieville.
	Fenner	Nov. 18, 1913	*In charge,* A. J. Nicoll. *Local Correspondent,* J. L. O'Hara, Cazenovia.
	Hamilton	Dec. 16, 1913	*In charge,* D. P. Witter. *Local Correspondent,* J. G. Patterson, Hamilton.
	Madison	Dec. 17, 1913	*In charge,* D. P. Witter. *Local Correspondent,* Willard T. Taylor, Solsville.
	Nelson	Nov. 17, 1913	*In charge,* A. J. Nicoll. *Local Correspondent,* K. W. Jones, Nelson.
	New Woodstock	Jan. 28, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* I. H. Hunt, New Woodstock.
	Stockbridge	Dec. 19–20, 1913	*In charge,* D. P. Witter. *Local Correspondent,* C. E. Love, Munnsville.
Monroe	Brockport	Mar. 9, 1914	*In charge,* Edward van Alstyne. *Local Correspondent,* E. W. Brigham, Brockport.
	Chili	Jan. 23, 1914	*In charge,* Wm. Hotaling. *Local Correspondent,* B. McNall, Scottsville.

COUNTY	PLACE	DATE	
Monroe (*Cont.*)	Churchville	Feb. 26, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Walter G. McIntosh, Churchville.
	Fairport	Jan. 20, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, Irving Warner, Fairport.
	Gates Center	Jan. 24, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, John C. Curry, Jr., Gates.
	Greece	Jan. 22, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, Judson Kenyon, Barnard.
	Hilton	Feb. 14, 1914	*In charge*, D. P. Witter. *Local Correspondent*, J. B. Miller, Hilton.
	Honeoye Falls	Feb. 6, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, James Heath, Honeoye Falls.
	Pittsford	Jan. 21, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, D. J. Howard, Henrietta.
	Webster	Mar. 11-12, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, Geo. W. Dunn, Webster.
Montgomery	Charleston Four Corners.	Feb. 6, 1914	*In charge*, John H. Barron. *Local Correspondent*, Orville A. Tillapaugh, Sloansville.
	Freysbush	Feb. 4, 1914	*In charge*, John H. Barron. *Local Correspondent*, F. J. Hiller, Fort Plain, R. D. 3.
	Minaville	Feb. 7, 1914	*In charge*, John H. Barron. *Local Correspondent*, Howard A. Hewitt, Minaville.
	Rural Grove	Feb. 5, 1914	*In charge*, John H. Barron. *Local Correspondent*, A. H. Dievendorf, Sprakers.
	Seeber's Lane Grange, Canajoharie	Feb. 26, 1914	*In charge*, John H. Barron. *Local Correspondent*, C. L. St. John, Canajoharie.
Nassau	Mineola	Jan. 19-20, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, Elwood V. Titus, Glen Cove.
Niagara	Barker	Feb. 10, 1914	*In charge*, D. P. Witter. *Local Correspondent*, John J. Connolly, Barker.
	Johnson's Creek	Feb. 19, 1914	*In charge*, D. P. Witter. *Local Correspondent*, W. W. Prudom, Middleport, R. D. 38.
	Lockport	Feb. 20, 1914	*In charge*, D. P. Witter. *Local Correspondent*, E. E. Crosby, Lockport, R. D.
	Newfane	Feb. 21, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Miss Elma McKee, Newfane.
	Pekin	Feb. 23, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Chas. E. Mabon, Sanborn.
	Pendleton Center	Jan. 8, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, L. J. T. Richards, Pendleton.
	Ransomville	Feb. 9, 1914	*In charge*, D. P. Witter. *Local Correspondent*, W. D. Wisner, Ransomville.

COUNTY	PLACE	DATE	
Oneida	Ava	Nov. 21, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, N. C. Vary, Ava.
	Bridgewater	Feb.*27–28, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Miss Anna S. Ward, Bridgewater.
	Floyd	Nov. 19, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, O. B. Lawton, Stittville.
	Knoxboro	Dec. 18, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Chas. Fairchild, Knoxboro.
	Verona	Feb. 2, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. W. Davis, Verona Station.
	Westernville	Nov. 20, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, Thos. M. Carroll, Westernville.
Onondaga	Baldwinsville	Feb. 20, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, John T. Mellor, Baldwinsville, R. D. 3.
	Borodino	Feb. 12, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Lee Monk, Marietta, R. D. 1.
	Cicero	Feb. 17, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Mrs. Ernest Hazard, Brewerton, R. D. 1.
	Fayetteville	Dec. 5–6, 1913	*In charge*, Edward van Alstyne. *Local Correspondent*, F. E. Dawley, Fayetteville.
	Jordan	Feb. 21, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, H. J. Picard, Jordan, R. D. 1.
	Mandana	Feb. 11, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Fred Bowker, Mandana, R. D. 1.
	Navarino	Feb. 13, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Fred Rowe, Marcellus, R. D. 4.
	North Manlius	Feb. 16, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Miss Maud O. Hulburt, Kirkville, R. D. 1.
	Onondaga Hill	Feb. 14, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, John H. Tucker, Syracuse, R. D. 2.
	Tully	Feb. 10, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, John C. Reagan, Tully.
Ontario	Canandaigua	Mar. 9, 1914	*In charge*, John H. Barron. *Local Correspondent*, O. J. Cooley, Canandaigua.
	Clifton Springs	Jan. 26, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Howard D. Converse, Clifton Springs.
	Hall	Jan. 28, 1914	*In charge*, D. P. Witter. *Local Correspondent*, R. F. Hall, Hall.
	Honeoye	Feb. 7, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, F. B. Allen, Honeoye.
	Naples	Mar. 12, 1914	*In charge*, John H. Barron. *Local Correspondent*, M. M. Wheeler, Naples.

COUNTY	PLACE	DATE	
Ontario (*Cont.*)	Oaks Corners	Mar. 7, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. S. Doolittle, Phelps, R. D.
	Seneca Castle	Jan. 27, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Levi A. Page, Seneca Castle.
	Victor	Feb. 5, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, A. G. Aldridge, Victor.
Orange	Balmville	Jan. 20, 1914	*In charge*, John H. Barron. *Local Correspondent*, G. S. Sheeley, Newburg, R. D. 1.
	Bullville	Feb. 18, 1914	*In charge*, John H. Barron. *Local Correspondent*, I. V. Ellis, Bullville.
	Goshen	Feb. 21, 1914	*In charge*, John H. Barron. *Local Correspondent*, C. S. Wells, Goshen.
	Monroe	Feb. 23, 1914	*In charge*, John H. Barron. *Local Correspondent*, W. H. Owens, Monroe.
	Montgomery	Feb. 13–14, 1914	*In charge*, John H. Barron. *Local Correspondent*, John K. Brown, Montgomery.
	Otisville	Feb. 19, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. H. Smith, Otisville.
	Pine Bush	Feb. 17, 1914	*In charge*, John H. Barron. *Local Correspondent*, Elmer Van Keuren, Pine Bush.
	Unionville	Feb. 20, 1914	*In charge*, John H. Barron. *Local Correspondent*, Mrs. M. B. Stoll, Unionville.
Orleans	Albion (Farmers' Days)	Feb. 24-25-26, 1914	*In charge*, Edward van Alstyne. *Correspondents:* Orleans Co.— John Bidelman, Albion. Niagara Co.— E. J. McClew, Newfane. " " — E. H. Anderson, Lockport. Monroe Co.— L. A. Toan, Rochester.
	Clarendon	Mar. 10, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, Herbert Allis, Holly.
	East Shelby	Feb. 18, 1914	*In charge*, D. P. Witter *Local Correspondent* B C. Roberts, Medina.
	Lyndonville	Feb. 11, 1914	*In charge*, D. P. Witter. *Local Correspondent*, C. H. I. Potter, Lyndonville.
	Medina	Feb. 17, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Jay Allis, Medina.
	Morton	Feb. 13, 1914	*In charge*, D. P. Witter. *Local Correspondent*, F. M. Botting, Morton.
	Sandy Creek	Feb. 16, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Leigh Walter, Holley.
	Waterport	Feb. 12, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Dr. R. W. Bamber, Waterport.
Oswego	Amboy	Dec. 23, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, Fred Jamieson, Williamstown, R. D.
	Bernhards Bay	Feb. 18, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, H. E. Myers, Bernhards Bay.

COUNTY	PLACE	DATE	
Oswego . . . . . . (*Cont.*)	Central Square	Feb. 19, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Chas. B. Allen, Centr Square, R. D. 1.
	Fulton . . . . (Farmers' Days)	Dec.16-17-18,1913	*In charge*, Edward van Alstyne. *Correspondents:* Oswego Co.— W H. Pollard, Fulton, R. D. 7. " Co.— H. M. Doyle, Oswego. Onondaga Co.— S. A. Martin, Syracuse. Oneida Co.— G. W. Bush, Utica.
	Hannibal	Jan. 10, 1914	*In charge*, D. P. Witter. *Local Correspondent*, P. A. Welling, Hannibal.
	Lacona	Dec. 18, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, A. R. Stevens, Lacona.
	Lycoming	Jan. 9, 1914	*In charge*, D. P. Witter. *Local Correspondent*, O. H. Cornwall, Oswego, R. D. 1.
	Mexico	Jan. 8, 1914	*In charge*, D. P. Witter. *Local Correspondent*, G. A. Buck, Mexico.
	Mt. Pleasant	Jan. 7, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Chas. Potter, Fulton, R. D. 2.
	Orwell	Dec. 19, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, Geo. S. Loomis, Orwell.
	Palermo	Jan. 6, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Martin Dolbear, Fulton, R. D.
	Phoenix	Jan. 5, 1914	*In charge*, D. P. Witter. *Local Correspondent*, W. H. Carrier, Phoenix.
	Pulaski	Dec. 20, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, E. H. Minot, Richland, R. D. 1.
	Williamstown	Dec. 22, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, E. N. Harris, Williamstown.
Otsego	Cherry Valley	Dec. 15, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, H. Cassart, Cherry Valley.
	Fly Creek	Dec. 18, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, S. H. Elderkin, Fly Creek.
	Garrettsville	Dec. 19, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Geo. B. Myers, Garrettsville.
	Gilbertsville	Dec. 22, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Samuel Halbert, Gilbertsville.
	Middlefield	Dec. 16, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Claude E. Cook, Cooperstown, R. D. 2
	Schenevus	Dec. 13, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, C. M. Bulson, Schenev
	Westville	Dec. 17, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Geo. Chamberlain, Schenevus, R. D.
	Worcester	Dec. 12, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Noah E. Vredenburg, Worcester, R. D. 3.

COUNTY	PLACE	DATE	
Putnam......	Adams Corners...	Jan. 30, 1914	*In charge* John H. Barron. *Local Correspondent*, Geo. F. Barmore, Adams Corners.
	Mahopac.........	Jan. 29, 1914	*In charge*, John H. Barron. *Local Correspondent*, F. J. Ganong, Crafts.
	Patterson.........	Jan. 27, 1914	*In charge*, John H. Barron. *Local Correspondent*, E. F. Hayt, Brewster.
Rensselaer....	Berlin............	Jan. 8, 1914	*In charge*, John H. Barron. *Local Correspondent*, Arthur Cowee, Berlin.
	Center Brunswick.	Dec. 19–20, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, I. W. Abbott, Troy, R. D. 1.
	Hoosick Falls.....	Jan. 9–10, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. C. Cottrell, Hoosick Falls.
	Melrose..........	Dec. 11, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, A. S. Chase, Melrose, R. D. 2.
	Raymertown......	Dec. 12, 1913	*In charge*,Wm. Hotaling. *Local Correspondent*,E.L.Button,Melrose,R.D.2.
	Stephentown......	Jan. 7, 1914	*In charge*, John H. Barron. *Local Correspondent*, W. L. Cranston, Stephentown.
Rockland.....	Tallmans.........	Feb. 24-25, 1914	*In charge*, John H. Barron. *Local Correspondent*, Thos. Husson, Pomona.
St. Lawrence..	Edwardsville......	Jan. 6, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, B. B. Lane, Hammond, R. D.
	Fine.............	Dec. 9, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, John P. Griffin, Oswegatchie.
	Gouverneur....... (Farmers' Days)	Dec.29-30-31,1913	*In charge*, Edward van Alstyne. *Correspondents:* St. Lawrence Co.— E.Laidlaw,Gouverneur. St. Lawrence Co.— C. S. Phelps, Canton. Jefferson Co.— F. E. Robertson, Watertown. Lewis Co.— M. M. Lyman, Lowville.
	Hammond........	Jan. 5, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, E. P. Allen, Hammond.
	Heuvelton........	Jan. 9–10, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, N. S. Hutchinson, Heuvelton.
	Lawrenceville.....	Jan. 22, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, J. P. Hourihan, North Lawrence.
	Lisbon...........	Jan. 7–8, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, J. Leslie Craig, Ogdensburg, R. D.
	Madrid..........	Jan. 12, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Herbert Sweet, Madrid.
	Nicholville........	Jan. 21, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, H. B. Chandler, Nicholville.
	Norfolk..........	Jan. 13, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, C. A. Whittaker, Raymondville.

COUNTY	PLACE	DATE	
St. Lawrence.. (*Cont.*)	Potsdam	Jan. 23, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, B. T. Scott, Potsdam.
	Spragueville	Jan. 24, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Rev. W. K. Bradshaw, Spragueville.
	Waddington	Jan. 14, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, M. J. Elliott, Madrid, R. D.
	Winthrop	Jan. 15–16, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, George G. Gillette, Winthrop.
Saratoga	Charlton	Feb. 9, 1914	*In charge*, John H. Barron. *Local Correspondent*, C. S. Haynes, Ballston Lake.
	Clifton Park Ctr.	Feb. 10, 1914	*In charge*, John H. Barron. *Local Correspondent*, J. R. Peck, Rexford.
	Gansevoort	Dec. 8, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, Haywood Cary, Gansevoort.
	Greenfield Center	Dec. 9, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, W. G. Robinson, Greenfield Center.
	Schuylerville (Farmers' Days)	Mar. 17–18–19, 1914	*In charge*, Edward van Alstyne. *Correspondents:* Saratoga Co.—A. C. Lottridge, Schuylerville. Washington Co.— Geo. Randles, West Hebron. Warren Co.— Jay Gelder, Glens Falls. Schenectady Co.— John A. Ennis, Pattersonville. Rensselaer Co.— H. J. Best, West Sand Lake.
	Wayville	Dec. 10, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, W. R. Putnam, Wayville.
Schenectady	Glenville	Dec. 29, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, Mina Van Epps, Hoffmans.
	Mariaville	Dec. 31, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, H. A. Turnbull, Patterson, R. D.
	Pattersonville	Dec. 30, 1913	*In charge*, A. J. Nicoll. *Local Correspondent*, I. F. Patterson, Pattersonville.
Schoharie	Breakabeen	Dec. 1, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, W. H. Travis, Middleburg, R. D. 1.
	Fultonham	Dec. 6, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Moses Lawyer, Fultonham.
	Gallupville	Dec. 9, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Geo. Becker, Gallupville.
	Gilboa	Dec. 2, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, D. W. Southard, Gilboa.
	Livingstonville	Dec. 5, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Watson Auchempaugh, Livingstonville.

COUNTY	PLACE	DATE	
Schoharie..... (*Cont.*)	Manorkill........	Dec. 4, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Wm. Thorpe, Manorkill.
	Middleburg.......	Dec. 8, 1913	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, W. E. Van Wormer, Middleburg.
Schuyler.....	Beaver Dams.....	Feb. 5, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Dennis Schuyler, Beaver Dams, R. D. 1.
	Burdett..........	Feb. 2, 1914	*In charge*, D. P. Witter. *Local Correspondent*, M. K. Mulligan, Burdett.
	Catherine........	Feb. 3, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Mrs. M. H. Hewitt, Alpine.
	Moreland.........	Mar. 6, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, A. W. Russell, Beaver Dams, R. D.
	Tyrone...........	Nov. 17, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Lewis Beach, Tyrone.
	Wayne...........	Mar. 7, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, D. E. Hoover, Keuka.
Seneca.......	Covert...........	Mar. 5, 1914	*In charge*, John H. Barron. *Local Correspondent*, Mrs. May Stevens, Covert.
	Romulus.........	Mar. 6, 1914	*In Charge*, John H. Barron. *Local Correspondent*, E. L. Cook, Romulus, R. D.
	Seneca Falls......	Mar. 11, 12, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Wm. T. Beach, Seneca Falls, R. D. 3.
Steuben......	Bath.............	Jan. 9–10, 1914	*In charge*, Geo. A. Smith. *Local Correspondent*, H. S. Emerson, Bath.
	Campbell.........	Jan. 6, 1914	*In charge*, Geo. A. Smith. *Local Correspondent*, John C. Thorp, Campbell, R. D. 2.
	Canisteo.........	Feb. 20–21, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, J. A. Allen, Canisteo.
	Caton............	Jan. 5, 1914	*In charge*, Geo. A. Smith. *Local Correspondent*, Henry Walden, Corning, R. D 2.
	Cohocton.........	Jan. 12, 1914	*In charge*, Geo. A. Smith. *Local Correspondent*, Nicholas Hoag, Cohocton.
	Greenwood.......	Feb. 19, 1914	*In charge*, P. P. McPherson. *Local Correspondent*, T. M. Blair, Greenwood.
	Hedgesville.......	Feb. 23, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Marion Lewis, Cameron Mills, R. D. 2.
	Hornby..........	Nov. 18, 1913	*In charge*, D. P. Witter. *Local Correspondent*, J. I. Easterbrook, Beaver Dams.
	Ingleside.........	Jan. 13, 1914	*In charge*, Geo. A. Smith. *Local Correspondent*, C. A. Graves, Prattsburg, R. D. 3.
	North Urbana.....	Jan. 7, 1914	*In charge*, Geo. A. Smith. *Local Correspondent*, H. M. De Graw, Hammondsport, R. D. 4.

COUNTY	PLACE	DATE	
Steuben...... (*Cont.*)	Prattsburg........	Jan. 8, 1914	*In charge*, Geo. A. Smith. *Local Correspondent*, Walter H. Babco Prattsburg.
	Stephens Mills....	Feb. 17–18, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, L. K. Robinson, Hornell, R. D. 2.
Suffolk.......	Bridgehampton...	Jan. 13–14, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, H. T. Haney, Bridgehampton.
	East Northport...	Jan. 12–13, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, F. B. Smith, Fort Salonga.
	Orient...........	Jan. 15, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, Louis M. Young, Orient.
	Southold.........	Jan. 16-17, 1914	*In charge*, Edward van Alstyne. *Local Correspondent*, G. H. Smith, Peconic.
Sullivan......	Fremont Center...	Dec. 11, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Frank Berry, Fremont Center.
	Grahamsville.....	Dec. 9, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Wm. Booth, Grahamsville.
	Hurleyville.......	Dec. 8, 1913	*In charge*, D. P. Witter. *Local Correspondent*, F. A. Durland, Hurleyville.
	Jeffersonville.....	Dec. 10, 1913	*In charge*, D. P. Witter. *Local Correspondent*, Chas. S. Hicks, Jeffersonville.
	Lake Huntington..	Dec. 12, 1913	*In charge*, D. P. Witter. *Local Correspondent*, H. J. Tyler, Cochecton Center.
Tioga........	Apalachin........	Feb. 27-28, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, C. F. Giles, Apalachin.
	Nichols..........	Mar. 3, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, S. N. Lounsberry, Lounsberry.
	North Barton.....	Feb. 26, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, D. V. Besemer, Waverly, R. D. 2.
	Spencer..........	Mar. 5, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Fred Seely, Van Etten, R. D.
	Waverly.........	Mar. 4, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Miss Alida Murray, Waverly.
Tompkins....	Danby..........	Feb. 2, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, L. W. Hulslander, Wils ville.
	Dryden..........	Jan. 31, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, Mrs. Chas. Horn, Dryden.
	East Lansing.....	Mar. 4, 1914	*In charge*, John H. Barron. *Local Correspondent*, D. C. De Camp, Groton, R. D. 12.
	Enfield Center....	Feb. 4, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, Fred D. Rumsey, Newfield, R. D. 28.

COUNTY	PLACE	DATE	
Tompkins.... (*Cont.*)	Speedsville.......	Jan. 30, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, P. C. Meddaugh, Candor, R. D. 2.
	Trumbull Corners.	Feb. 3, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, C. B. Boice, Newfield, R. D. 28.
	West Groton......	Jan. 27, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, W. H. Bulkley, Groton.
Ulster........	Clintondale.......	Jan. 19, 1914	*In charge*, John H. Barron. *Local Correspondent*, W. D. Tallman, Highland, R. D.
	Lake Katrine.....	Jan. 17, 1914	*In charge*, John H. Barron. *Local Correspondent*, C. E. Davis, Saugerties, R. D. 4.
	Mettacahonts.....	Feb. 12, 1914	*In charge*, John H. Barron. *Local Correspondent*, D. E. Schoonmaker, Accord.
	Wallkill..........	Feb. 16, 1914	*In charge*, John H. Barron. *Local Correspondent*, C. O. Smith, Wallkill, R. D. 1.
Washington...	Argyle...........	Dec. 15, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, Geo. S. Carswell, Smiths Basin, R. D. 1.
	Cambridge.......	Dec. 17, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, W. J. Davis, Cambridge.
	Clemons..........	Dec. 2, 1913	*In charge*, John H. Barron. *Local Correspondent*, B. P. Ripley, Clemons, R. D. 1.
	Easton...........	Dec. 18, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, Jacob Pratt, Greenwich, R. D.
	Hartford.........	Dec. 22, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, J. H. Beadle, Hartford.
	North Granville...	Dec. 23, 1913	*In charge*, Wm. Hotaling. *Local Correspondent*, Geo. S. Chapin, Smith's Basin.
	Putnam..........	Dec. 3, 1913	*In charge*, John H. Barron. *Local Correspondent*, R. B. Graham, Putnam.
	West Hebron.....	Dec. 16, 1913	*In charge*, Wm Hotaling. *Local Correspondent*, W. E. Getty, Granville, R. D.
	Whitehall........	Dec. 1, 1913	*In charge*, John H. Barron. *Local Correspondent*, M. E. Wilsey, Whitehall, R. D. 1.
Wayne.......	Lincoln..........	Jan. 23, 1914	*In charge*, D. P. Witter. *Local Correspondent*, J. C. Hulbert, Lincoln.
	Macedon.........	Jan. 19, 1914	*In charge*, Wm. Hotaling. *Local Correspondent*, Miss G. C. Packard, Macedon.
	Newark.......... (Farmers' Days)	Feb.25-26-27, 1914	*In charge*, Jared Van Wagenen, Jr. *Correspondents:* Wayne Co.— E. D. Clark, Newark. “ “ — C. R. Clark, Newark. Ontario Co.— J. I. Wells, Shortsville. Monroe Co.— Lewis A. Toan, Rochester. Seneca Co.— E. W. Mitchell, Waterloo.

COUNTY	PLACE	DATE	
Wayne....... (*Cont.*)	Ontario..........	Jan. 22, 1914	*In charge*, D. P. Witter. *Local Correspondent*, John Fewster, Ontario
	Savannah........	Jan. 16-17, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Gipson Mead, Savannah.
	Sodus............	Jan. 21, 1914	*In charge*, D. P. Witter. *Local Correspondent*, B. E. Moody, Sodus.
	South Butler......	Jan. 19, 1914	*In charge*, D. P. Witter. *Local Correspondent*, W. E. Hall, South Butler.
	Walworth........	Jan. 24, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Warner D. Esley, Walworth.
	Wolcott..........	Jan. 20, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Mrs. Judd Clark, Wolcott.
Westchester...	Lincolndale.......	Jan. 31, 1914	*In charge*, John H. Barron. *Local Correspondent*, Rev. Bro. Barnabas, Lincolndale.
Wyoming.....	Attica............	Mar. 4, 1914	*In charge*, D. P. Witter. *Local Correspondent*, C. Broadbooks, Attica.
	Bliss.............	Mar. 6, 1914	*In charge*, D. P. Witter. *Local Correspondent*, E. J. Foote, Bliss.
	Cowlesville.......	Jan. 5, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, L. M. Kittsley, Cowlesville.
	Curriers..........	Mar. 5, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Chas. F. Day, Java.
	Perry Center......	Mar. 7, 1914	*In charge*, D. P. Witter. *Local Correspondent*, B. A. Nevins, Perry.
	Silver Springs....	Mar. 9, 1914	*In charge*, D. P. Witter. *Local Correspondent*, M. W. Broughton, Silver Springs.
	Wyoming.........	Mar. 10, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Frank S. Hayden, Wyoming.
Yates........	Bellona..........	Jan. 29, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Rev. T. M. Morrison, Bellona.
	Dresden..........	Mar. 10, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, E. C. Nutt, Dresden.
	Lakemont........	Mar. 9, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Jas. S. Frost, Lakemont.
	Middlesex........	Mar. 11, 1914	*In charge*, John H. Barron. *Local Correspondent*, Herbert Foster, Rushville.
	Penn Yan........	Jan. 30–31, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Mrs. T. Costello, Penn Yan.
	Rushville........	Mar. 10, 1914	*In charge*, John H. Barron. *Local Correspondent*, L. C. Williams, Rushvill

* Note : The institute will consist of three sessions ; first session evening of first day.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 87

UNIVERSITY OF ILLINOIS
AUG 21 1915

Information Relative to

Agricultural Opportunities
in the
State of New York
with Special Reference to
Fruit Production

A New York Apple Tree in Bloom

Fruit farm overlooking Seneca Lake, New York

FRUIT PRODUCTION IN NEW YORK.

The New York State Department of Agriculture at Albany, N. Y., invites the careful attention of all persons who are or may be interested in acquiring a home or lands in the State, to the superior advantages afforded by congenial climate, fertile soils, proximity to great markets, and a wealthy consuming public.

Social and educational advantages are unsurpassed and the means of transportation and rapid communication reach all portions of the State. It is but a short distance from the homes of our farmers to centers of population — the markets, schools, granges and churches.

This particular circular presents some facts relative to fruit. Other publications of the Department are intended to cover all subjects relating to agriculture and will be sent on application.

The Department of Agriculture is ready to furnish information relative to any agricultural question, and to advise any farmer within the State or any person who desires to locate here to engage in any branch of agriculture.

New York ranks first in population and twenty-ninth in land area among the states and territories in the United States.

Of the entire area of the State about one-twentieth, most of which is on Long Island, lies below an altitude of 100 feet above sea level. Four-fifths of the State lies between elevations of 100 and 1,500 feet.

The higher plateaus and mountainous altitudes of the Adirondacks and Catskills rise above 2,000 feet, while the maximum altitude which is in excess of 5,000 feet is found only in the case of a few Adirondack peaks.

The sloping moraines down to the sea level consist chiefly of loams, sandy loams deposited as glacial out wash.

The nature of the soils formed by the breaking down of the highlands has resulted in a great variety of fertile farms.

All of these soils are well fitted for market gardening and the production of fruits. The small area in the southwestern portion

"The cherry is becoming more and more profitable in New York."

of New York State contains soils of the unglacial Appalachian plateau. This area is rugged and deeply dissected. The glacial lake deposits occupy all of the lower altitudes along Lake Erie, Ontario and Champlain and form considerable borders along the St. Lawrence, Mohawk and Hudson rivers. These soils comprise clay loams, loams, sandy and gravelly loams in great variety.

The soils of New York State are unsurpassed in variety and natural fertility and are particularly adapted to the growing of practically all crops that can be produced in a temperate zone.

The normal rainfall is annually sufficient for crops without irrigation, though irrigation for special crops in limited area is gaining favor in some localities and proving useful in vegetable growing and in the production of strawberries.

Old apple orchard showing clean cultivation

The land surface of New York State is approximately 30,500,000 acres. Of this land area about 22,000,000 acres or 72 per cent. are included in farms. A little less than 15,000,000 acres are improved lands on which the State depends principally

A young apple orchard properly cared for

A profitable peach orchard

for its agricultural production, and the average size of the farms is 102.2 acres.

There are 215,597 farms in New York State. One hundred and seventy thousand seven hundred and twenty-five of these farms are operated by owners or managers and 44,872 by tenants.

Of the farmers in the State, 87 per cent. are native white and 12½ per cent. are foreign born whites.

Fruit growing in the State of New York has assumed such large proportions and has been pursued so long that it is away beyond the experimental stage. There is no State where conditions are more favorable or where the industry is so firmly established. Soil, climate and proximity to the best markets of the world are ours and it only remains for growers to apply their knowledge to succeed.

The statistics in this pamphlet are taken from or compiled from the bulletins of the thirteenth census for the year 1910. Values given are those at the farm or place of production and do not include canned fruits, evaporated apples, cider, wine or other by-products.

A ride through any agricultural section of the State outside of the dairy counties will reveal to the observer that the finest and most prosperous looking farms are those on which an apple orchard or other fruit trees are properly cared for. It is fair to assume that in most cases the orchard has contributed to the prosperity of the owner.

The value of all fruit produced in the State of New York according to the last census is as follows: $24,826,066.

Apples	$13,343,028
Peach	2,014,088
Pear	1,418,218
Plum	519,192
Cherry	544,508
Apricot and nectarine	14,490
Quince	135,345
Total value of orchard fruits	$17,988,894

Value of small fruits	$2,875,495
Value of grapes	3,961,677
	$24,826,066

The value of all fruit produced in New York State exceeds the value of the tropical and sub-tropical fruits produced in the United States by $2,114,618.

New York has a total of 24,988,707 orchard trees which produce 29,456,291 bushels, valued at $17,988,894.

New York ranks third, exceeded by California and Missouri, in number of trees.

Peach orchard, Niagara county, twenty-three years old and very productive

New York ranks second in bushels of fruit produced exceeded by California by about 2,045,216 bushels, because of their immense prune industry.

New York has 14,076,718 apple trees which produce 25,409,324 bushels valued at $13,343,028.

New York ranks first in the value of apples; first in bushels produced and second in number of trees. Missouri ranks first in the number of trees with 17,984,506, but with a production of 9,968,977 bushels.

New York has 3,644,257 pear trees which produce 1,343,089 bushels valued at $1,418,218.

New York ranks first in the number of trees; second in the quantity and value produced, closely following California in this respect.

New York ranks third in value of peaches produced, about equal to Georgia and less than half the value produced in California.

A well-laden peach branch

New York ranks third in the value of plums and prunes, producing $519,192; Washington producing $600,503 and California, with its enormous prune industry, producing $5,443,539.

New York has 309,734 quince trees which produce 132,451 bushels valued at $135,345.

New York ranks first as it produces about one-fourth of the quinces raised in the United States.

New York has 35,603,897 grape vines in vineyards which produce 253,006,361 pounds, valued at $3,961,677.

New York ranks second in number, production and value of vines, while California ranks first with a production of $10,846,812.

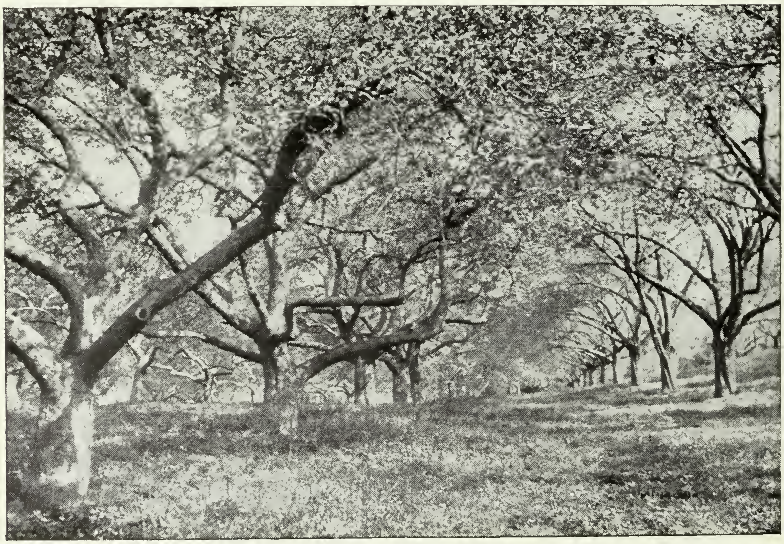
New York produced $2,867,673 in flowers and plants, thus ranking first.

New York produced $2,750,957 in nursery products, thus placing it in first rank.

New York has 22,496 acres in small fruits producing 37,857,829 quarts, ranking second, but closely following New Jersey which is first in small fruits.

New York ranks first with 11,057 acres in raspberries, and first in currants with 2,557 acres.

There are very few farms in the State of New York that are wholly occupied by fruit trees. Fruits of nearly all kinds are grown on nearly every farm in the State.



A fine old apple orchard. Trees set out in 1835

Within the great fruit belts, along Lakes Erie and Ontario and the Finger Lakes and the Hudson Valley, fruit growing is becoming highly specialized. It is estimated that less than one-fourth of the desirable orchard lands are at present occupied with trees.

The opportunities for development are very great as the population of the cities increase.

New York has an advantage over most fruit growing states owing to the proximity of the great consuming population and the short haul from the orchards to the great markets. Two-thirds of the population of the United States is within a radius of 800 miles of the central part of the State of New York.

APPLES

There are 215,597 farms in New York State of which 168,667 reported 11,248,203 bearing trees.

The 151,323,000 bearing age apple trees in the United States produced 147,522,318 bushels. New York had 11,248,233 bearing age trees which produced 25,409,324 bushels.

Gasoline spraying machine

The average product per tree in the United States was slightly less than one bushel each, while the average product in New York was 2.26 bushels.

In 1909 the state of New York had 7.4 per cent. of the bearing age trees in the United States and that same year it produced 17.2 per cent. of the apples produced in the United States.

Four counties in western New York produced about 10,500,000 bushels of apples, about two-fifths of the crop of the state. This amount is only exceeded by two other states, Pennsylvania and Michigan. The same year five other counties of western New York produced about 4,000,000 bushels and five counties in the Hudson valley produced over three and one-half million bushels. These counties while producing apple fruit extensively also produced large quantities of other kinds of fruit.

Strawberries are grown in young orchards of pears, plums and peaches

PEARS

New York is first in the total number of pear trees in the United States with 3,644,257 trees, of which 2,141,596 are of bearing age. The state has 14.1 per cent. of all bearing age pear trees in the United States and produces 15.2 per cent. of the fruit.

PEACHES

New York ranks first among the northern states in the production of peaches. The industry is rapidly growing in the Lake Ontario fruit belt and along the Hudson.

Soy beans as cover crop for a peach orchard

The average production per bearing tree in the United States was twelve quarts and the production per bearing tree in the state of New York was 22.6 quarts, while in Georgia it was 7.7; Illinois, 13.6; Indiana, 17.1; Delaware, .5; Michigan, 18.5; New Jersey, 11.6; Ohio, 10.5; Pennsylvania, 13.7; California, 37.8.

GRAPES

There are 223,701,522 bearing age grape vines in the United States which produced 2,571,065,205 pounds of grapes. California produces large quantities of semi-hardy grapes.

Exclusive of California the state of New York produces 46 per cent. of all grapes raised in the United States valued at $3,961,677. Chautauqua county alone produces many times more grapes than any state in the Union, California excepted. The last reported crop was 132,029,939 pounds. Michigan comes next with 120,700,000 pounds. Next in order is Ohio with about 44,000,000 pounds.

SMALL FRUITS

New York is second in the acreage of small fruits and first in the production with 37,857,829 quarts valued at $2,875,295. These small fruits consist of strawberries, blackberries, raspberries, currants, gooseberries, etc.

A field of strawberries

In addition to the foregoing the state of New York produced in flowers and plants $5,148,949; nursery products $750,957, and forest products from farms of $10,365,651.

The federal census reports the number of bearing trees and product in 1909 as follows:

FRUITS AND NUTS

Orchard fruits:		
Total	trees	**17,625,093**
	bushels	**29,456,291**
Apples	trees	11,248,203
	bushels	25,409,324
Peaches and nectarines	trees	2,457,187
	bushels	1,736,483
Pears	trees	2,141,596
	bushels	1,343,089
Plums and prunes	trees	919,017
	bushels	553,522
Cherries	trees	673,989
	bushels	271,597
Quinces	trees	169,031
	bushels	132,451
Grapes	vines	31,802,097
	pounds	253,006,361
Small fruits:		
Total	acres	**22,496**
	quarts	**37,857,829**
Strawberries	acres	6,382
	quarts	15,945,863
Raspberries and loganberries	acres	11,057
	quarts	14,751,940
Nuts	trees	164,333
	pounds	2,773,858

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 88

UNIVERSITY OF ILLINOIS

AUG 21 1915

PROVISIONS

of the

AGRICULTURAL LAW

relating to

Dairy Products

1913

ARTICLE 3

Dairy Products

Section 30. Definitions.
31. Care and feed of cows, and care and keeping of the produce from such cows.
32. Prohibiting the sale of adulterated milk, imitation cream and regulating the sale of certified milk.
33. Regulations in regard to butter and cheese factories.
34. Penalty for delivery of adulterated milk.
35. Inspection; how conducted.
36. Branded cans, jars or bottles not to be sold, re-marked or used without consent of owner.
37. Regulations in regard to condensed milk.
38. Manufacture and sale of imitation butter prohibited.
39. Manufacture or mixing of animal fats with milk, cream or butter prohibited.
40. Prohibited articles not to be furnished for use.
41. Coloring matter, dairy terms, size of package, labeling, penalties.
42. Coloring matter in food products; analysis by state board of health.
43. Manufacture and sale of imitation cheese prohibited.
44. When prohibitions do not apply to skim-milk or skim-cheese.
45. Unclean receptacles and places for keeping milk; notice to violators of provisions.
46. Unsanitary cans and receptacles condemned.
47. Receptacles to be cleaned before returning; receptacles may be seized; evidence; violation; milk can inspectors.
48. Manufacturer's brand of cheese.
49. Use of false brand prohibited.
50. County trade marks.
51. Object and intent of this article.
52. Penalties.
53. Butterine and similar products not to be purchased by certain institutions.
54. Purchase, sale and use of butterine and similar products prohibited in certain institutions.

Section 55. Licensing of milk gathering stations where milk is bought.
56. Power of Commissioner to investigate.
57. Granting and revoking licenses.
58. Certiorari to review.
59. Records to be kept.
60. Right of review.
61. Offenses.
*62.
*63.
*64.

§ 30. **Definitions.** The term "butter" when used in this article means the product of the dairy, usually known by that term, which is manufactured exclusively from pure, unadulterated milk or cream or both with or without salt or coloring matter; and the term "cheese," when used in this article, means the product of the dairy usually known by that term, which is manufactured exclusively from pure, unadulterated milk or cream, or both, and with or without coloring matter, salt, rennet, sage, olives, pimentos, walnuts, peanuts, tomatoes, celery salt or onions added thereto as a flavor. And provided further, that when manufactured by adding to the elemental product of the dairy, usually known by the term "cheese," and manufactured exclusively from pure unadulterated milk or cream or both, any pimentos, olives, walnuts, peanuts, celery salt, tomatoes, or onions, that the percentage of all such substances so added shall not exceed twenty-five per centum in bulk of the manufactured product.

Butter.

Cheese.

The terms "oleomargarine," "butterine," "imitation of butter," or "imitation cheese" shall be construed to mean any article or substance in the semblance of butter or cheese not the usual product of the dairy and not made exclusively of pure or unadulterated milk or cream, or any such article or substance into which any oil, lard or fat not produced from milk or cream enters as a component part, or into which melted butter or butter in any condition or state, or any oil thereof has been introduced to take the place of cream. The term "adulterated milk" when so used means:

Oleomargarine. Butterine. Imitation butter and cheese.

Adulterated milk.

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* These sections did not become law.

Water or fluids. 1. Milk containing more than eighty-eight and one-half per centum of water or fluids.

Milk solids. 2. Milk containing less than eleven and one-half per centum of milk solids.

Fats. 3. Milk containing less than three per centum of fats.

Time taken. 4. Milk drawn from cows within fifteen days before and five days after parturition.

Feed of cows. 5. Milk drawn from animals fed on distillery waste or any substance in a state of fermentation or putrefaction or on any unhealthy food.

Insanitary surroundings. 6. Milk drawn from cows kept in a crowded or unhealthy condition; or milk produced or kept in insanitary surroundings or in any environment or under any condition whatever that is inimical to its healthfulness or wholesomeness.

Removal of cream. 7. Milk from which any part of the cream has been removed.

Dilution. 8. Milk which has been diluted with water or any other fluid, or to which has been added or into which has been introduced any foreign substance whatever.

Pure or unadulterated milk and cream. All adulterated milk shall be deemed unclean, unhealthy, impure and unwholesome. The terms "pure milk" or "unadulterated milk" when used singly or together, mean sweet milk not adulterated, and the terms "pure cream" or "unadulterated cream" when used singly or together, mean cream taken from pure and unadulterated milk. Adulterated cream. The term "adulterated cream" when used shall mean cream containing less than eighteen per centum of milk fat or cream to which any substance whatsoever has been added. (*As amended by chapter* 455 *of the Laws of* 1913.)

People v. Bosch, 129 App. Div. 660; People v. Bowen, 182 N. Y. 1; People v. Cipperly, 101 Id. 634; s. c. (dissenting opinion), 37 Hun, 324; People v. Eddy, 12 N. Y. Supp. 628; People v. Kibler, 106 N. Y. 321; People v. Koster, 50 Misc. Rep. 46; People v. Anton Koster, 121 App. Div. 852; People v. Liberman Dairy Co., 195 N. Y. 609; People v. Schaeffer, 41 Hun, 23; People v. West, 106 N. Y. 293; People v. McDermott Dairy Co., 132 N. Y. Supp. 329; Bellows v. Raynor, 207 N. Y. 389.

§ 31. **Care and feed of cows, and care and keeping of the produce from such cows.** No person shall keep cows, for the production of milk for market or for sale or exchange, or for manufacturing the milk or cream from the same into any article of food, in Care. a crowded or unhealthy condition or in unhealthful or unsanitary surroundings and no person shall keep such cows or the product therefrom in such condition or surroundings or in such places as shall cause or tend to cause the produce from such cows to be in an unclean, unhealthful or diseased condition, if the produce from such cows is to be sold, offered or exposed for sale upon the markets for consumption or to be manufactured into any food product, nor shall such cows or the produce therefrom be handled or cared for by any person suffering with or affected by an infectious or contagious disease, nor shall any such cows be fed on any substance that is in a state of putrefaction or fermentation, or upon any food that is unhealthful or that produces or may produce impure, unhealthful, diseased or unwholesome milk. But this section shall not be construed to prohibit the feeding of ensilage. The commissioner of agriculture is hereby empowered to give such instruction and impart such information as in his judgment may be deemed best to produce a full observance of the provisions of this section. (*As amended by chapter* 216 *of the Laws of* 1910.)

Feed.

Ensilage.

Instruction.

§ 32. **Prohibiting the sale of adulterated milk, imitation cream and regulating the sale of certified milk.** No person shall sell or exchange or offer or expose for sale or exchange, any unclean, impure, unhealthy, adulterated or unwholesome milk or any cream from the same, or any unclean, impure, unhealthy, adulterated, colored, or unwholesome cream, or sell or exchange, or offer or expose for sale or exchange, any substance in imitation or semblance of cream, which is not cream, nor shall he sell or exchange, or offer or expose for sale or exchange any such substance as and for cream, or sell or exchange, or offer or expose for sale or exchange any article of food made from such milk or cream or manufacture from any such milk or cream any article of food. No person shall sell or exchange, or offer or expose for sale or exchange, as and for certified milk, any milk which does not conform to the regulations prescribed by and bear the certification of a milk commission appointed by a county medical society organized under and chartered by the medical society of the state of New York and which has not been pronounced by such authority to be free from antiseptics, added preservatives, and pathogenic bacteria, or bac-

Impure product.

Imitation product.

Certified milk.

teria in excessive numbers. All milk sold as certified milk shall be conspicuously marked with the name of the commission certifying it. Any person delivering milk to any butter or cheese factory, condensary, milk gathering station or railway station to be shipped to any city, town or village shall be deemed to expose or offer the same for sale whether the said milk is delivered or consigned to himself or another. Each and every can thus delivered, shipped or consigned, if it be not pure milk, must bear a label or card upon which shall be stated the constituents or ingredients of the contents of the can.

Delivery deemed an offer for sale.

Constituents stated.

People v. Abramson and Fichhandler, 137 App. Div. 549; People v. Beaman, 102 Id. 151; People v. Briggs, 121 Id. 927, 193 N. Y. 457; People v. Cipperly, 101 Id. 634; s. c. (dissenting opinion), 37 Hun, 324; People v. Eddy, 12 N. Y. Supp. 628; People v. Kibler, 106 N. Y. 321; People v. Liberman Dairy Co., 128 App. Div. 904, 931; People v. Schaeffer, 41 Hun, 23; People v. Tsitsera, 138 App. Div. 446, 122 N. Y. Supp. 915; People v. West, 106 N. Y. 293.

§ 33. **Regulations in regard to butter and cheese factories.** No person shall sell, supply or bring to be manufactured to any butter or cheese factory any milk diluted with water, or any unclean, impure, unhealthy, adulterated or unwholesome milk, or milk from which any of the cream has been taken, except pure skim milk to skim-cheese factories. No person shall sell, supply or bring to be manufactured to any butter or cheese factory any milk from which there has been kept back any part of the milk commonly known as strippings, or any milk that is sour, except pure skim milk to skim-cheese factories. The owner or proprietor or the person having charge of any butter or cheese factory, not buying all the milk used by him, shall not use for his own benefit, or allow any of his employees or any other person to use for his own benefit, any milk, cream, butter or cheese or any other product thereof, brought to such factory, without the consent of the owners of such milk or the products thereof. Every butter or cheese manufacturer not buying all the milk he uses, shall keep a correct account of all the milk daily received, of the number of packages of butter and cheese made each day, and the number of packages and aggregate weight of cheese and butter disposed of each day; which account shall be open to inspection to any person who delivers milk to such factory. Whenever manufacturers of butter or cheese purchase milk upon the basis of the

Kind of milk prohibited.

Any part of milk kept back.

Sour milk.

Use of dairy products by factoryman.

Record of daily business.

amount of fat contained therein and use for ascertaining the amount of such fat what is known as the Babcock test, or whenever the proceeds of co-operative creameries and cheese factories are allotted on the basis of determinations of milk fat by the Babcock test, the bottles and pipettes used in such test shall before use be examined by the director of the New York agricultural experiment station. If such bottles are found to be properly constructed and graded so as to accurately show the amount of fat contained in milk, each of them shall be legibly and indelibly marked "S. B." No bottle shall be so marked except as herein provided or used in any such test by such manufacturers, unless so examined and marked. The acid used in making such test by such manufacturers shall be examined from time to time by competent chemists employed by the commissioner of agriculture and if found not to be of sufficient strength the use of such acid shall be prohibited. No person or persons receiving or purchasing milk or cream upon the basis of the amount of fat contained therein, shall credit any patron or patrons delivering milk or cream thereto with a greater or lesser percentage or average percentage of fat than is actually contained in the milk or cream so delivered. The commissioner of agriculture or persons employed by him for that purpose may at any time assist in making tests of milk received at a butter or cheese factory for the purpose of determining the efficiency of tests usually made at such factory. All persons using other than standard bottles or acid which is not of the required strength to accurately determine the amount of fats in milk or crediting any patron or patrons delivering milk or cream with a greater or lesser percentage or average percentage of fat than is actually contained in the milk or cream so delivered, shall be subject to the penalties prescribed by section fifty-two of this article, and shall be guilty of a misdemeanor.

Babcock test glassware.

Examination of acid.

Crediting fat percentage.

Agents may assist in factory test.

Misdemeanor.

§ 34. **Penalty for delivery of adulterated milk.** Any person, firm, association or corporation delivering any milk to any butter or cheese factory in violation of any of the provisions of this chapter shall forfeit and pay to the patrons, firm, association or corporation owning the milk delivered to such factory the sum of fifty dollars, to be recovered in a civil action by the person, firm, association or corporation entitled thereto.

§ 35. **Inspection; how conducted.** When the commissioner of agriculture, an assistant commissioner, or any person or officer authorized by the commissioner, or by this chapter, to examine or inspect any product manufactured or offered for sale shall in discharge of his duties take samples of such product, he shall before taking a sample, request the person delivering the milk or who has charge of it at the time of inspection, to thoroughly stir or mix the said milk before the sample is taken. If the person so in charge refuses to stir or mix the milk as requested, then the person so requesting shall himself so stir and mix the milk before taking the sample, and the defendant shall thereafter be precluded from introducing evidence to show that the milk so taken was not a fair sample of the milk delivered, sold, offered or exposed for sale by him. The person taking the sample of milk for analysis shall take duplicate samples thereof in the presence of at least one witness, and he shall in the presence of such witness seal both of such samples, and shall tender, and, if accepted, deliver at the time of taking one sample to the manufacturer or vender of such product, or to the person having custody of the same, with a statement in writing of the cause of the taking of the sample. In taking samples of milk for analysis at a creamery, factory, platform or other place where the same is delivered by the producer for manufacture, sale or shipment, or from a milk vender who produces the milk which he sells, with a view of prosecuting the producer of such milk for delivering, selling or offering for sale adulterated milk, the said commissioner of agriculture or assistant or his agent or agents shall within ten days thereafter, with the consent of the said producer, take a sample in a like manner of the mixed milk of the herd of cows from which the milk first sampled was drawn and shall deliver the duplicate sample to the said producer and shall cause the sample taken by himself or his agent to be analyzed. If the sample of milk last taken by the commissioner of agriculture or his agent or agents shall upon analysis prove to contain no higher percentage of milk solids, or no higher percentage of fat than the sample taken at the creamery, factory, platform or other place, then no action shall lie against the said producer for violation of subdivisions one, two, three, seven and eight of section thirty of this chapter. In taking a

Stirring the milk.

Duplicate sample.

Herd sample.

Bar to action.

second sample as above set forth from the mixed milk of the herd, it shall be the duty of the commissioner of agriculture to have an assistant, agent or agents present during the entire time in which the said cattle are being milked to observe closely so as to be sure that the milk thus to be sampled is not adulterated and to see that it is thoroughly mixed so that the sample taken shall be a fair sample of the average quality of the mixed milk of the entire dairy or herd of cows of said producer. If, however, the said producer refuses to allow such examination of the milk produced by his dairy, then he shall be precluded from offering any evidence whatever tending to show that the milk delivered by him at the said creamery, factory, platform or other place was just as it came from the cow. If the said producer does permit such examination, the commissioner of agriculture shall, upon receiving application therefor, send to said producer a copy of the analysis of each of the samples of milk so taken and analyzed as above provided. If a sample of milk shall have been taken by the commissioner of agriculture or by his orders or directions from any dairy within this state and an analysis thereof has been made by the commissioner or by his authority, any person who is or was buying milk from the said dairy at or subsequent to the time of such taking, may apply to the commissioner of agriculture for a copy of the analysis of the said sample of milk so taken and the commissioner shall thereafter furnish the said applicant with such copy. (*As amended by chapter* 608 *of the Laws of* 1911.)

Fair sample.

Refusal of sample.

Copy of analysis on application.

People v. Butler, 140 App. Div. 705; People v. Hodnett, 81 N. Y. 137; People v. St. John, 89 App. Div. 617, 178 N. Y. 617, 201 U. S. Sup. Ct. 633; People v. Salisbury, 2 App. Div. 39; s. c., 151 N. Y. 663; People v. Weaver, 116 App. Div. 594; People v. Wiard, 61 App. Div. 612, 170 N. Y. 590; People v. Woodbeck, 55 App. Div. 227.

§ 36. **Branded cans, jars or bottles not to be sold, re-marked or used without consent of owner.** No person shall hereafter without the consent of the owner or shipper, use, sell, dispose of, buy or traffic in any milk can, jar or bottle, or cream can, jar or bottle, belonging to any dealer or shipper of milk or cream residing in the state of New York or elsewhere, who may ship milk or cream to any city, town or place within this state, having the name or initials of the owner, dealer or shipper, stamped, marked or fastened on such can, jar or bottle, or wilfully mar, erase or change

Tampering with label.

by re-marking or otherwise said name or initials of any such owner, dealer or shipper, so stamped, marked or fastened upon said can, jar or bottle. Nor shall any person without the consent of the owner use such can, jar or bottle, for any other purpose than for milk or cream; nor shall any person without the consent of the owner place in any such can, jar or bottle, any substance or product other than milk or cream.

Use of receptacles for other purposes.

§ 37. **Regulations in regard to condensed milk.** No condensed milk shall be made or offered or exposed for sale or exchange unless manufactured from pure, clean, healthy, fresh, unadulterated and wholesome milk from which the cream has not been removed either wholly or in part, or unless the proportion of milk solids shall be in quantity the equivalent of eleven and one-half per centum of milk solids in crude milk, and of which solids twenty-five per centum shall be fats. No person shall manufacture, sell or offer for sale or exchange in hermetically sealed cans, any condensed milk unless put up in packages upon which shall be distinctly labeled or stamped the name of the person or corporation by whom made and the brand by which or under which it is made. When condensed milk shall be sold from cans or packages not hermetically sealed, the producer shall brand or label the original cans or packages with the name of the manufacturer of the milk contained therein. (*As amended by chapter* 608 *of the Laws of* 1911.)

Milk used.

Labels on packages.

Genesee Valley Milk Products Co. v. J. H. Jones, 128 N. Y. Supp. 191 (condensed skim milk).

Manufacture of imitation butter.

§ 38. **Manufacture and sale of imitation butter prohibited.** No person by himself, his agents or employees, shall produce or manufacture out of or from any animal fats or animal or vegetable oils not produced from unadulterated milk or cream from the same, the article known as oleomargarine or any article or product in imitation or semblance of natural butter produced from pure, unadulterated milk or cream of the same; or mix, compound with or add to milk, cream or butter any acids or other deleterious substance or any animal fats or animal or vegetable oils not produced from milk or cream, so as to produce any article or sub-

Addition of foreign substance.

stance or any human food in imitation or in semblance of natural butter, nor sell, keep for sale or offer for sale any article, substance or compound, made, manufactured or produced in violation of the provisions of this section, whether such article, substance or compound shall be made or produced in this state or elsewhere. Any person manufacturing, selling, offering or exposing for sale any commodity or substance in imitation or semblance of butter, the product of the dairy, shall be deemed guilty of a violation of this chapter, whether he sells such commodity or substance as butter, oleomargarine or under any other name or designation whatsoever and irrespective of any representations he may make relative to such commodity or substance. Any dealer in any article or product, the manufacture or sale of which is prohibited by this section, who shall keep, store or display such article or product, with other merchandise or stock in his place of business, shall be deemed to have the same in his possession for sale.

Sale of imitation butter.

Violation irrespective of representations.

Display equivalent to offer for sale.

People v. Arensburg, 40 Hun, 358; s. c., reversed, 103 N. Y. 388, 105 Id. 123; People v. Bremer, 69 App. Div. 14; People v. Clark, 124 N. Y. Supp. 1023; People v. Fried, 62 Misc. Rep. 240; People v. Hale, 62 Id. 240; People v. Hill, 44 Hun, 472; People v. Kerin, 39 Id. 631, 4 Crim. Rep. 140; People v. Laning, 40 App. Div. 227, 59 N. Y. Supp. 1057; People v. Mahaney, 41 Hun, 26; People v. Marx, 99 N. Y. 377; People ex rel. McAuley v. Wahle, 124 App. Div. 762; People v. Meyer, 44 Id. 1; People v. Schintzius, 61 Misc. Rep. 410; People v. Simpson Crawford Co., 62 Id. 240; People v. Teele, 131 App. Div. 87; Plumley v. Commonwealth of Massachusetts, 155 U. S. 461, 15 Sup. Ct. Rept. 154; Powell v. Commonwealth of Pennsylvania, 114 Penn. St. 265, 127 U. S. 678; Waterbury v. Egan, 3 Misc. Rep. 355, 52 State Rep. 421, 23 N. Y. Supp. 115; Waterbury v. Newton, 50 N. J. L. 534.

§ 39. **Manufacture or mixing of animal fats with milk, cream or butter prohibited.** No person shall manufacture, mix or compound with or add to natural milk, cream or butter any animal fats or animal or vegetable oils, nor make or manufacture any oleaginous substance not produced from milk or cream, with intent to sell the same as butter or cheese made from unadulterated milk or cream or have the same in his possession with such intent; nor shall any person solicit or take orders for the same or offer the same for sale, nor shall any such article or substance or compound so made or produced, be sold as and for butter or cheese, the product of the dairy. No person shall coat, powder or color with annatto or any coloring matter whatever, butterine

Manufacture.

Sale.

Coloring.

or oleomargarine or any compound of the same or any product or manufacture made in whole or in part from animal fats or animal or vegetable oils not produced from unadulterated milk or cream by means of which such product, manufacture or compound shall resemble butter or cheese, the product of the dairy; nor shall he have the same in his possession with intent to sell the same nor shall he sell or offer to sell the same. No person by himself, his agents or employees, shall manufacture, sell, offer or expose for sale, butter that is produced by taking original packing stock or other butter or both and melting the same, so that the butter fat can be drawn off, then mixing the said butter fat with skimmed milk or milk or cream or other milk product and rechurning the said mixture, or that is produced by any similar process and is commonly known as boiled or process butter, unless he shall plainly brand or mark the package or tub or wrapper in which the same is put up in a conspicuous place with the words " renovated butter " or " process butter." If the same shall be put up, sold, offered or exposed for sale in prints or rolls, then the said prints or rolls shall be labeled plainly with printed letters in a conspicuous place on the wrapper with the words " renovated butter " or " process butter." If the same is packed in tubs or boxes or pails or other kind of a case or package the words " renovated butter " or " process butter " shall be printed on the top and side of the same in letters, at least, one inch in length, so as to be plainly seen by the purchaser. If such butter is exposed for sale, uncovered, not in a package or case, a placard containing the label so printed shall be attached to the mass of butter in such manner as to easily be seen and read by the purchaser. Every person selling, offering or exposing for sale at retail, " renovated butter " or " process butter," shall cause each parcel or package of such butter delivered to or for a customer to be wrapped in a light colored paper on which shall be printed in black letters, not less than three-eighths inch square and in Gothic type, the words " renovated butter " or " process butter." No person shall sell, offer or expose for sale, any butter or other dairy products containing a preservative, but this shall not be construed to prohibit the use of salt in butter or cheese, or spirituous liquors in club or other fancy cheese or sugar in

Process butter.

Labeling.

Labeling prints.

Labeling tubs.

Display placard.

Retail wrappers.

Preservative.

condensed milk. No person, firm, association or corporation shall induce or attempt to induce any person to violate any of the provisions of this chapter. Any person, firm, association or corporation selling, offering or advertising for sale any substance, preparation or matter for use in violation of the provisions of this chapter shall be guilty of a violation of this section.

Inducing violations.

People v. Arensberg, 40 Hun, 358; s. c., reversed, 103 N. Y. 388, 105 Id. 123; People v. Biersicker, 169 Id. 53; People v. Fried, 62 Misc. Rep. 240; People v. Hale, 62 Id. 240; People v. Hill, 44 Hun, 472; People v. Kerin, 39 Hun, 631; People v. Mack, 97 App. Div. 474; People v. Mahaney, 41 Hun, 26; People v. Simpson Crawford Co., 62 Misc. Rep. 240; People v. Waters, 114 Id. 669; Plumley v. Commonwealth of Massachusetts, 155 U. S. 461, 15 Sup. Ct. Rep. 154; Powell v. Commonwealth of Pennsylvania, 144 Penn. St. 265, 127 U. S. 678; Waterbury v. Newton, 50 N. J. L. 534.

§ 40. **Prohibited articles not to be furnished for use.** No keeper or proprietor of any bakery, hotel, boarding-house, restaurant, saloon, lunch-counter or place of public entertainment, nor any person having charge thereof or employed thereat, nor any person furnishing board for any others than members of his own family, or for any employees where such board is furnished for a compensation or as part of the compensation of any such employee, shall keep, use or serve therein either as food for his guests, boarders, patrons, customers or employees or for cooking purposes any article or substance made in violation of the provisions of this article. Any keeper or proprietor of any hotel, boarding-house, restaurant, saloon, lunch-counter or place of public entertainment who uses or serves therein for his guests any oleaginous substance as a substitute for butter, the manufacture or sale of which is not prohibited by the agricultural law, shall print plainly and conspicuously on the bill-of-fare, if there is one, the words, "Oleomargarine Used Here" and shall post up conspicuously in different parts of each room where such meals are served, signs in places where they can be easily seen and read, which shall bear the words, "Oleomargarine Used Here" in letters at least two inches in length and so printed as to be easily read by guests or boarders. (*As amended by chapter* 357 *of the Laws of* 1909.)

Food for guests, employees, etc.

Provisions relative to legal substitutes.

People v. Berwin, 77 N. Y. Supp. 859; People v. Brien, 117 Id. 246; People v. Dobbins, 113 Id. 1076; People v. Fox, 4 App Div. 38, 74 State Rep. 500, 38 N. Y. Supp. 635; People v. Gottfried, 113 Id. 1086; People v. Guiton Co., 137 N. Y. Supp. 600.

§ 41. Coloring matter, dairy terms, size of package, labeling, penalties. No person manufacturing with intent to sell any substance or article in imitation or semblance of butter or cheese not made exclusively from unadulterated milk or cream or both, with salt or rennet or both and with or without coloring matter or sage, but into which any animal, intestinal or offal fats, or any oils or fats or oleaginous substance of any kind not produced from pure, unadulterated milk or cream, or into which melted butter, or butter in any condition or state or any modification of the same, or lard or tallow shall be introduced, shall add thereto or combine therewith any annatto or compounds of the same, or any other substance or substances whatever, for the purpose or with the effect of imparting thereto a color resembling yellow, or any shade of yellow butter or cheese, nor introduce any such coloring matter or other substance into any of the articles of which the same is composed. And no person selling any oleaginous substance not made from pure milk or cream of the same as a substitute for butter shall sell, give away or deliver with such substance any coloring matter; nor shall any person manufacturing, selling or offering for sale any such goods make or sell them under any brand, device or label bearing words indicative of cows or the product of the dairy or the names of breeds of cows or cattle, nor use terms indicative of processes in the dairy in making or preparing butter; no such substance shall hereafter be sold, offered or exposed for sale in this state except it be sold in packages containing not more than five pounds, such packages to be wrapped and sealed, the original seal of which shall be unbroken and upon which seal shall be plainly printed the name and address of the manufacturer of said oleomargarine, and the said packages shall be plainly and conspicuously labeled with the word "Oleomargarine" in Gothic or equally conspicuous letters at least three-eighths of an inch high. The word "Oleomargarine" in large prominent letters shall be stamped by indentation on each separate brick or portion of the substance itself before it is wrapped and sealed.

Imitating butter color.

Sale or gift of color.

Dairy terms prohibited.

Weight, seal and label of package.

Brick stamp.

Any person violating any of the provisions of sections forty or forty-one of the agricultural law shall forfeit and pay a penalty to the people of the state of New York of not less than fifty

Penalties.

dollars nor more than one hundred dollars for the first violation and not less than two hundred dollars nor more than five hundred dollars for the second and each subsequent violation. Whoever by himself or another violates any of the provisions of sections forty or forty-one of the agricultural law shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars or by imprisonment of not less than one month nor more than one year or by both such fine and imprisonment for the first offense and by not less than six months nor more than one year for the second offense. (*As amended by chapter* 357 *of the Laws of* 1909.)

Misdemeanor.

People v. Arensburg, 40 Hun, 358; s. c., reversed, 103 N. Y. 388, 105 Id. 123; People v. Griffin, 128 N. Y. Supp. 946, 71 Misc. Rep. 566; People v. Hill, 44 Hun, 472; People v. Redding, 70 Misc. Rep. 420; People v. Guiton Co., 137 N. Y. Supp. 600.

§ 42. **Coloring matter in food products; analysis by state board of health.** No person or persons shall manufacture, sell or expose for sale any poisonous coloring matter for the coloring of food products of any kind, nor shall any person or persons use any poisonous coloring matter manufactured, sold, offered or exposed for sale within this state; nor shall any person or persons sell, offer or expose for sale any food product containing such poisonous coloring matter. The state commissioner of health shall cause samples of coloring matter that are exposed for sale upon the market for use in food products to be analyzed and report the results of such analysis to the legislature at the next session.

Poisonous coloring matter.

Analysis by state board of health.

§ 43. **Manufacture and sale of imitation cheese prohibited.** No person shall manufacture, deal in, sell, offer or expose for sale or exchange any article or substance, in the semblance of or in imitation of cheese made exclusively of unadulterated milk or cream, or both, into which any animal, intestinal or offal fats or oils, or melted butter or butter in any condition or state or modification of the same, or oleaginous substances of any kind not produced from unadulterated milk or cream, shall be introduced.

§ 44. **When prohibitions do not apply to skim-milk or skim-cheese.** Except in the counties of New York and Kings, the pro-

Skim-milk.

Skim-cheese.

hibitions contained in this article against the sale of adulterated milk shall not apply to skim-milk, which is clean, pure, healthy, wholesome and unadulterated, except by skimming, sold for use in the county in which it is produced or an adjoining county, if it is sold for and as skimmed milk. The prohibitions in this article against the sale of cheese made from unadulterated* milk or cream, shall not apply to pure skim-cheese made from milk which is clean, pure, healthy, wholesome and unadulterated, except by skimming.

People v. Kibler, 106 N. Y. 321.

Sanitation.

§ 45. **Unclean receptacles and places for *keping milk; notice to violators of provisions.** No person, firm, association or corporation, producing, buying or receiving milk for the purpose of selling the same for consumption as such, or for manufacturing the same into butter, cheese, condensed milk, or other human food, shall keep the same in utensils, cans, vessels, rooms, or buildings that are unclean or have unsanitary surroundings or drainage or in any condition whatsoever that would tend to produce or promote conditions favorable to unhealthfulness or disease. The commissioner of agriculture shall notify all persons, firms, associations or corporations, violating this section, to clean said utensils, cans, vessels, rooms or buildings, or to so improve the sanitary conditions that the law will not be violated, and if such notice is complied with in ten days' time, Sundays excepted, then no action shall lie for a violation of this section. Any person having charge of any milk gathering station where milk is received from the dairymen for the purpose of selling the same for consumption or shipping the same to market for consumption as human food before taking such charge or operating or working as such agent or person in charge shall apply to the commissioner of agriculture for a license to so work or operate or have charge, and shall at the time of making such application, file with the commissioner a statement under oath, setting forth the fact that he will not while having charge of or operating any such milk gathering establishment or while employed therein adulterate or suffer or permit the adulteration of any such milk or any product thereof during the term for which he may be licensed. After the

Notice to clean receptacles, etc.

Application for license.

Statement.

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* So in the original.

applicant shall have complied with the foregoing provisions of this section, the commissioner of agriculture upon being satisfied that the applicant is a person of good moral character and a qualified and proper person to so have charge of or operate any such milk gathering station or establishment shall issue to said applicant a license, which shall qualify him to have charge of any such milk gathering station or establishment for the period of two years from the date of such license; provided, however, that where milk is to be bought from the dairymen at any such milk gathering station by the proprietor, person in charge or any agent of the proprietor of such station, such license shall be only for a period of one year, as provided in sections fifty-five to sixty-four, inclusive, of this article, and the matter required to be set forth in the application for a license under the provisions of this section shall be set forth in the application provided for in sections fifty-five to sixty-four in addition to the matters therein required. The person regularly doing the work of receiving, caring for and shipping the milk at any station or establishment, or in case more than one person is so employed then the foreman in charge of such works shall be deemed to be a person in charge of such station or establishment within the meaning and purposes of this section. Such license certificate shall be kept at such station or establishment where the license is so employed and shall be open to the inspection of the representatives of the department of agriculture and the public. Any person having charge of any milk gathering station or establishment as aforesaid shall keep a true and correct monthly record of the receipts of milk or other dairy products received at such station or establishment, and also a true and correct monthly record of all sales or shipments of milk, cream or other dairy products shipped or sold from such station or establishment, and shall also keep a true and correct monthly record of the amount of skim milk produced in such station or establishment and of the disposition of said skim milk. Such record shall be preserved at such station or establishment for at least two years after the same shall have been made and such records shall at all times be open to the inspection of the commissioner of agriculture, his assistants or agents. When cream is sold or shipped from

Issuing license.

Exception.

Person in charge.

Certificate.

Records.

Label on bottle or package.

any such station or establishment so selling or shipping milk for consumption as aforesaid, each original bottle or package of one quart or less of cream so shipped or sold shall bear a label securely attached to the side of such bottle or package on which shall be conspicuously printed the word " cream " in black letters of at least one-fourth of an inch in length or else the word " cream " shall be blown in the side of such bottle in plain raised letters of at least one-half an inch in length, and the top and side of each and every other original package or can containing cream or original crate or case containing bottles of cream so shipped or sold shall bear a label securely attached on which shall be conspicuously printed the word " cream " in black letters of at least one inch in length and also a plainly written or printed statement on the label stating from whom and what station the same is shipped and the name of the consignee and point of destination and the date on which the cream therein was produced by such separation or skimming. The shipment of each and every such original package of cream so shipped and not so labeled as herein required shall constitute a separate violation.

Conclusions as to adulterating with skim-milk.

When cream is so separated or skimmed from milk at any such station or establishment and the supply of milk on hand thereat at the time of the next regular daily shipment of milk therefrom, consisting of the total amount of milk in such shipment, together with that remaining on hand immediately after such shipment, is not thereby decreased or correspondingly less than the total quantity received during any period extending from some point of time before such skimming was done until the time of such shipment, together with the amount of milk on hand at the commencement of such period, and such decrease is not equal in amount to the quantity of milk that must have been used in so separating such cream in addition to the quantity otherwise there used or disposed of during such period, such fact is conclusive that skim milk or other foreign substance was added to

Presumptive evidence.

such milk supply within such period and shall be presumptive evidence within the meaning of this section that the same was added to each can or vessel of milk in such shipment. When cream or skim milk is found to have been on the premises of any

Presumptions.

such station or establishment or is sold or shipped therefrom, such cream or skim milk so found or so sold or shipped therefrom shall be presumed to have been produced by separating or skimming at such station or establishment. In any action or proceeding relative to the adulteration of milk by removing cream therefrom or adding skim milk or other foreign substance thereto, it shall be presumed that when cream has been produced by so skimming or separating or butter has been manufactured, there was made at least five quarts of milk in the production of each quart of cream so produced and there was necessarily so produced thereby at least four quarts of skim milk to each quart of cream so produced, and that there was used at least nine quarts of milk in the production of each pound of butter so manufactured. If any such person so duly licensed shall thereafter refuse or neglect to keep and preserve full and complete records as herein required or shall refuse to exhibit such records to the commissioner of agriculture, his assistants or agents or shall violate any of the provisions of this section or any of the provisions of this chapter relative to milk or the products thereof he shall forfeit his license and shall be disqualified for a period of five years from being again licensed by the commissioner of agriculture. (*As amended by chapter* 408 *of the Laws of* 1913.)

Forfeiture of license.

§ 46. **Unsanitary cans and receptacles condemned.** All cans, or receptacles used in the sale of milk, cream or curd for consumption, or in transporting or shipping the same to market or the delivery thereof to purchasers for consumption as human food, when found by the commissioner of agriculture or his assistants or agents to be in unfit condition to be so used by reason of being worn out, badly rusted, or with rusted inside surface, or unclean or unsanitary or in such condition that they can not be rendered clean and sanitary by washing, and will tend to produce or promote in milk, cream or curd when contained therein, bad flavors, unclean or unwholesome conditions favorable to unhealthfulness or disease, shall be condemned by the commissioner of agriculture or his assistants or agents. Every such can or receptacle when so condemned shall be marked by a stamp, impression or device, designed by the commissioner of agriculture, showing that it has been so condemned, and when so condemned shall not thereafter

Rusted or unclean cans.

Marking condemned cans.

Further use of condemned cans.

be used by any person for the purpose of so selling, transporting or shipping milk, cream or curd.

§ 47. **Receptacles to be cleansed before returning; receptacles may be seized; evidence; violation; milk can inspectors.** Whenever any can or receptacle is used for transporting or conveying milk, cream or curd to market for the purpose of selling or furnishing the same for consumption as human food, which can or receptacle, when emptied, is returned or intended to be returned to the person so selling, furnishing or shipping such substance to be again thus used, or which is liable to continued use in so transporting, conveying, selling or shipping such substance as aforesaid, the consumer, dealer or consignee using, selling or receiving the milk, cream or curd from such can or receptacle, shall, before so returning such can or receptacle remove all substances foreign to milk therefrom, by rinsing with water or otherwise. When any such milk, cream or curd is sold within any city of this state or shipped into any such city, the fact of such shipment or sale shall be prima facie evidence that the same was so shipped or sold for consumption as human food. When any such can or receptacle is returned or delivered or shipped to any person or creamery so selling such substance within, or shipping the same into such city, it is deemed that such can or receptacle is liable to such continued use in so selling or shipping such substance therein for consumption as human food within the meaning and purposes of this section and section forty-six. No person shall place or suffer to be placed in any such can or receptacle any sweepings, refuse, dirt, litter, garbage, filth or any other animal or vegetable substance, nor shall any such consignee or other person through himself, his agent or employee, bring or deliver to any person or railroad or other conveyance any such can or receptacle for the purpose of such return, or any milk, cream or curd can or receptacle for the purpose of delivery or shipment to any person or creamery engaged in so selling or shipping such substances for consumption as human food, which can or receptacle contains such foreign substance or which has not been rinsed as herein provided. The word "curd" as used in this section and section forty-six applies to the substance otherwise known as "pot cheese" or "cottage

Cleansing receptacles.

Evidence.

Cans in use.

Garbage, etc., in cans.

Unwashed cans.

Curd.

Separate violation. Can seizure. Mill can inspectors.

cheese." Whenever any such can or receptacle is used, returned, delivered or shipped in violation of this section, or of section forty-six of this chapter, every such use, return, delivery or shipment of each such can or receptacle shall be deemed a separate violation thereof. Such cans or receptacles so used, returned, delivered or shipped in violation of this section or of section forty-six may be seized by the commissioner of agriculture, his assistants or agents and held as evidence of such violation. For the proper enforcement of this section and section forty-six, the commissioner of agriculture may appoint two milk can inspectors to be stationed chiefly in the city of New York who shall receive the usual compensation of other agents of the department of agriculture. (*As amended by chapter* 608 *of the Laws of* 1911.)

People v. Freedenberg, 155 App. Div. 199.

Manufacturers' brand. State brand. Use of brand. Record book.

§ 48. **Manufacturer's brand of cheese.** Every manufacturer of whole-milk cheese may put a brand or label upon such cheese indicating "whole-milk cheese" and the date of the month and year when made; and no person shall use such a brand or label upon any cheese made from milk from which any of the cream has been taken. The commissioner of agriculture shall procure and issue to the cheese manufacturers of the state, on proper application therefor, and under such regulations as to the custody and use thereof as he may prescribe, a uniform stencil brand or labels bearing a suitable device or motto, and the words, "New York state whole-milk cheese." Every such brand or label shall be used upon the outside of the cheese and shall bear a different number for each separate factory. The commissioner shall keep a book, in which shall be registered the name, location and number of each manufactory using the brands or labels, and the name or names of the persons at each manufactory authorized to use the same. No such brand or labels shall be used upon any other than whole-milk cheese or packages containing the same. (*As amended by chapter* 207 *of the Laws of* 1910.)

§ 49. **Use of false brand prohibited; branding of skim-milk cheese regulated.** No person shall offer, sell or expose for sale, in any package, butter or cheese which is falsely branded or labeled.

Selling cheddar cheese. No person shall sell, offer or expose for sale cheese commonly known as cheddar cheese made from skimmed or partially skimmed milk unless the same is branded to show that it is skim-milk cheese. Branding cheddar cheese. All such cheese so sold, offered or exposed for sale shall be branded with the words "skim-milk cheese," or if such cheese contains thirteen per centum of milk fat or over, it may be branded "medium skim-milk cheese," or if it contains eighteen per centum of milk fat or over, it may be branded "special skim-milk cheese," Such branding shall be upon the sides of both the cheese and the container. The branding herein provided shall be in block letters at least one-half an inch square. (*As amended by chapter* 456 *of the Laws of* 1913.)

§ 50. **County trade marks.** Adoption of county trade mark. At a regular or special meeting of a county dairymen's association in any county of the state there may be adopted a county trade mark, by a majority of the members present and voting, to be used as a trade mark by a person manufacturing pure unadulterated butter or full-cream cheese in such county. Filing trade mark. The secretary of the association shall forthwith send to the commissioner of agriculture a copy of such trade mark, which copy he shall place on file in his office, noting thereupon the day and hour he received the same. Infringements. But one county trade mark for butter and for cheese shall be placed on file for the same county. No association shall adopt any trade mark of any county already on file, or use that of any other county in the formation of a trade mark.

People v. Luhrs, 195 N. Y. 377.

§ 51. **Object and intent of this article.** Deception in dairy products. This article and each section thereof are declared to be enacted to prevent deception in the sale of dairy products, and to preserve the public health, Preservation of public health. which is endangered by the manufacture, sale and use of the articles or substances herein regulated or prohibited.

§ 52. **Penalties.** Every person violating any of the provisions of this chapter, shall forfeit to the people of the state of New York the sum of not less than fifty dollars nor more than one First violation. hundred dollars for the first violation and not less than one hundred dollars nor more than two hundred dollars for the second and each subsequent violation. When such violation consists of the manufacture or production of any prohibited article, each day during which or any part of which such manufacture or production is carried on or continued, shall be deemed a separate violation. When the violation consists of the sale, or the offering or exposing for sale or exchange of any prohibited article or substance, the sale of each one of several packages shall constitute a separate violation, and each day on which any such article or substance is offered or exposed for sale or exchange shall constitute a separate violation. When the use of any such article or substance is prohibited, each day during which or any part of which said article or substance is so used or furnished for use, shall constitute a separate violation, and the furnishing of the same for use to each person to whom the same may be furnished shall constitute a separate violation. Whoever by himself or another violates any of the provisions of articles three, four, six, eight and nine or sections three hundred fourteen and three hundred fifteen of this chapter or of sections one hundred six, one hundred seven and one hundred eight of this chapter shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than fifty dollars, nor more than two hundred dollars, or by imprisonment of not less than one month nor more than six months or by both such fine and imprisonment, for the first offense; and by six months' imprisonment for the second offense.

Second violation.

Separate violation.

Penalties.

Friedgood v. Kline, 67 Misc. Rep. (A. T.) 428, 123 N. Y. Supp. 247; People v. Briggs, 121 App. Div. 927; People v. Briggs, 193 N. Y. 457; People v. Anton Koster, 121 App. Div. 852; People v. Spencer as Trustee, 201 N. Y. 105 (vinegar cumulative penalties); People v. Wiggins, 201 N. Y. 151 (not proper party def't.).

§ 53. **Butterine and similar products not to be purchased by certain institutions.** No money appropriated by law for maintenance and support in whole or in part of a state institution; nor money received by a charitable, benevolent, penal or reformatory institution from the state, or from a county, city or town thereof, or appropriated by such county, city or town for the maintenance or support in whole or in part of such institution; nor money belonging to or used for the maintenance or support of such institution, shall be expended for the purchase of, or in payment for, butterine, oleomargarine, lard, cheese, or articles or products in imitation or semblance of natural butter or cheese produced from pure unadulterated milk or cream from the same, which articles or products have been rendered or manufactured in whole or in part from animal fats, or animal or vegetable oils not produced from unadulterated milk or cream from the same.

§ 54. **Purchase, sale and use of butterine and similar products prohibited in certain institutions.** No officer, manager, superintendent or agent of an institution mentioned in section fifty-three of this chapter, shall purchase for the use of such institution articles or products, for the purchase of which the money appropriated by law, or by a county, city or town, is forbidden to be used by section fifty-three of this chapter, and no person shall sell to, or for the use of such institution, such articles or products. Nor shall such articles or products be used as articles of food or for cooking purposes in such institutions within this state.

Prohibition of purchase of milk.

§ 55. **Licensing of milk gathering stations where milk is bought.** On and after September first, nineteen hundred and thirteen, no person, firm, association or corporation, shall buy milk within the state for the purpose of shipping the same to any city for consumption or for the manufacture thereof into butter, cheese, condensed milk or other human food, unless such business be regularly transacted at an office or station within the state and unless such person, firm, association or corporation be duly licensed as provided in this and the ensuing sections of this article. Every such person, firm, association or corporation before engaging or continuing in the business of buying milk for the purposes aforesaid, shall, annually, on or before August first, file an application with the commissioner of agriculture for a license to transact such business. The application shall state the nature of the business, as hereinabove set forth, the full name of the person or corporation applying for the license, and, if the applicant be a firm or association, the full name of each member of such firm, or association, the city, town or village and street number at which the business is to be conducted, and such other facts as the commissioner of agriculture shall prescribe. The applicant shall

Application for license to buy milk.

Statement. Name.

Address.

License fee.

Issuing license.

Ground for refusing to issue license.

further satisfy the commissioner of his or its character, financial responsibility and good faith in seeking to carry on such business. The commissioner shall thereupon issue to such applicant, on payment of ten dollars, a license entitling the applicant to conduct the business of buying milk from dairymen for the purposes aforesaid at an office or station at the place named in the application until the first day of September next following; provided, however, that if the application be presented in the month of July, and if the applicant so elects, such license may be granted to begin on the first day of September next following and run for a term of one year. A license shall not be issued, however, to any applicant if during the year preceding the filing of the application a complaint from any seller of milk shall have been filed with the commissioner against such applicant for any of the grounds specified in section fifty-seven hereof, and such complaint shall have been established as true and just to the satisfaction of the commissioner after such complaint shall have been investigated by the commissioner in the manner provided by section fifty-six hereof.

Definition.

The term "station" or "milk gathering station," as used in this and the ensuing sections of this article, shall include an established office where the business of buying milk as herein provided is carried on, with or without a place or premises in connection therewith for the physical handling of milk. (*As added by chapter* 408 *of the Laws of* 1913.)

Complaint.

Examination of documents.

§ 56. **Power of commissioner to investigate.** The commissioner and his assistants shall have power to investigate upon the complaint of any interested person, or of his own motion, the record of any person, firm or corporation applying for or holding a license, or any transaction involving the purchase by such applicant or licensee or attempted purchase of milk for shipment as provided in section fifty-five; and for such purpose may examine the ledgers, books of account, memoranda or other documents of any such person, firm, association or corporation applying for or holding a license and may take testimony therein under oath; but information relating to the general business of any such person, firm, association or corporation, disclosed by such investigation and not relating to the immediate purpose thereof shall be deemed of a confidential nature by the commissioner, his assistants, representatives and employees. When a complaint is filed with the commissioner, he shall attempt to secure an explanation or adjustment, and, failing this within ten days, he shall cause a copy of the complaint, together with a notice of the time and place for a hearing thereon, to be served personally or by mail upon said applicant or licensee. If served by mail, such complaint and notice shall be directed to the applicant or licensee at his place of business, with postage fully prepaid thereon. Such service shall be made at least seven days before the hearing. At the time and place appointed for such hearing, the commissioner or his assistants shall hear the parties to the complaint, shall have power to administer oaths and shall enter in the records of the office of the commissioner of agriculture a decision either dismissing such complaint or specifying the facts which he deems established on such hearing. (*As added by chapter* 408 *of the Laws of* 1913.)

Adjustment.

Service of notice.

Time and place of service.

Hearing.

§ 57. **Granting and revoking licenses.** The commissioner of agriculture may decline to grant a license or may revoke a license already granted when he is satisfied of the existence of the following cases or either of them:

Judgment against applicant.

1. Where a money judgment has been secured by any milk producer and has been entered against such applicant or licensee and remains unsatisfied of record.

Intent to defraud vendor.

2. Where there has been a failure to make prompt settlements to persons from whom he buys milk, with intent to defraud.

3. Where there have been combinations to fix prices.

Combinations.

Intent to defraud customers.

4. Where there has been a continual course of dealing of such nature as to satisfy the commissioner of the inability of the applicant or licensee to properly conduct the business or of an intent to deceive or defraud customers.

5. Where there has been a continued and persistant failure to keep records required by the commissioner or by law. (*As added by chapter* 408 *of the Laws of* 1913.)

§ 58. **Certiorari to review.** The action of the commissioner of agriculture in refusing to grant a license, or in revoking a license granted under section fifty-five, shall be subject to review by writ of certiorari, and if such proceedings are begun to review the revocation of license, the license shall be deemed to be in full force and effect until the final determination of certiorari proceedings and all appeals therefrom, or if such license shall have been refused the applicant for a license shall not be deemed to have violated the provisions of section fifty-five, prohibiting the transaction of the business therein specified without a license if the fee for such license shall have been paid. (*As added by chapter* 408 *of the Laws of* 1913.)

License to remain in force.

§ 59. **Records to be kept.** Every licensed proprietor of a milk gathering station shall keep, in such form as the commissioner of agriculture may prescribe, a record of transactions of purchases of milk by him. (*As added by chapter* 408 *of the Laws of* 1913.)

§ 60. **Right to review.** If either party to the transaction of purchase and sale between a milk producer or a milk seller and a licensed buyer of milk shall be dissatisfied relative to any transaction of purchase and sale of milk between a milk seller and a licensed buyer of milk, he may apply to the commissioner of agriculture, in writing, within sixty days after the delivery of such milk to the licensed buyer, for investigation. The commissioner of agriculture shall treat such application as a complaint, and shall cause a full investigation of the transaction complained of to be made either by himself or one of his assistants, in the manner provided by section fifty-seven. (*As added by chapter* 408 *of the Laws of* 1913.)

Dissatisfied party may apply for investigation.

§ 61. **Offenses.** Any person who, being a buyer of milk for shipment for the purposes set forth in section fifty-five, whether such person be licensed or whether his business be transacted at a station or otherwise, shall (a) fail to make prompt payments for milk purchased, with intent to defraud, or (b) shall make any false or misleading statement or statements enumerated in sections fifty-five to fifty-nine inclusive, with intent to deceive, or (c) enter into any combination to fix prices, or (d) not being licensed, shall conduct the business of buying milk for shipment as provided in section fifty-five, or (e) being licensed or otherwise, engages in such business without having a station or office therefor, or (f) fails to conform to any requirement of or violates any provision of sections fifty-five to fifty-nine, inclusive, with intent to deceive a seller of milk, shall be guilty of a misdemeanor. (*As added by chapter* 408 *of the Laws of* 1913.)

§ 62. See note.

§ 63. See note.

§ 64. See note.

Note.— These sections did not become law.
Note.— Section 64-a follows section 95.

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OF THE
UNIVERSITY OF ILLINOIS
7 APR 1915

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 89

PROVISIONS

# of the

AGRICULTURAL LAW

relating to

Diseases of Domestic Animals

1913

ARTICLE 5

Diseases of Domestic Animals

Section 90. Suppression of infectious and contagious disease.
91. Commissioner to issue notice.
92. Farms to be quarantined; inspection of premises.
93. Detention and destruction of animals.
94. Care of diseased animals; experiments.
95. Employment of veterinary surgeons.
*64-a. Tuberculin, issuing certificates relative to tuberculin tested cattle, branding of tuberculous animals.
96. Regulations, the enforcement thereof and expenses incurred by sheriff.
97. Fines and penalties.
98. Bureau of veterinary service; chief veterinarian; appraisers.
99. Appraisal of diseased animals.
100. Certificate of appraisal.
101. Post-mortem examination of animals.
102. Compensation of owners of animals destroyed.
103. Expenses.
104. Federal regulations. (Repealed by chapter 232 of the Laws of 1909.)
105. Rights of federal inspectors. (Repealed by chapter 232 of the Laws of 1909.)
106. Shipping, slaughtering and selling veal for food.
107. Shipping veal.
108. Receiving veal for shipment by common carriers.

Wilful importation of diseased animals.

§ 90. **Suppression of infectious and contagious diseases.** No person shall knowingly bring any domestic animal into this state which is suffering with an infectious or contagious disease. Any person knowingly bringing a domestic animal suffering with an infectious or contagious disease into this state shall be liable to and shall pay all damages, suffered or caused by the spreading of such disease, to the owner or owners of animals to which such disease is imparted by such animal or animals so brought in, as liquidated damages in addition to the penalties to the state of New York,

Damage for violation.

Interstate traffic.

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* So numbered in original.

as provided in section fifty-two of the agricultural law; provided that nothing herein contained shall be construed to prevent or make unlawful the transportation of such animals through this state on railroads or boats. Any person bringing into the state such animals which are used for breeding, feeding or dairy purposes without taking due precaution to ascertain whether such animals are suffering with such a disease shall be presumed to have brought them in knowingly and in violation of the statute. Under the foregoing provisions of this section, any animals, received from outside the state and distributed under the supervision of the United States department of agriculture or the state department of agriculture and for which a permit or certificate has been issued by either of said departments, shall be deemed to have been handled with due precaution. Whenever any infectious or contagious disease affecting domestic animals shall exist, be brought into or break out in this state the commissioner of agriculture shall take measures to promptly suppress the same, and to prevent such disease from spreading. The local boards of health shall notify the commissioner of the existence of infectious or contagious disease affecting domestic animals in the districts subject to their jurisdiction. Any person importing or bringing into this state neat cattle for dairy or breeding purposes shall report immediately upon bringing such cattle into the state to the commissioner of agriculture in writing, giving a statement of the number of cattle thus brought in, the place where they were procured, the lines over which they were brought and their point of destination within the state, stating when they will arrive at such point of destination, and upon the filing with the commissioner of agriculture at the time of making the said report, a certificate issued by a duly authorized veterinary practitioner, to the effect that he has duly examined said animals and that said animals are free from any infectious or contagious disease, the commissioner of agriculture may issue a permit to said person to remove said cattle immediately. Otherwise, said person shall hold or detain such animals at least ten days at such point of destination for inspection and examination, provided they are not sooner examined or inspected, by the commissioner of agriculture or his duly authorized agent. Each animal brought into

Due precaution.

Prompt action required

Boards of health to notify commissioner.

Report of cattle imported.

Permit to remove.

Detention for inspection.

the state in violation of the above provisions shall constitute a separate and distinct violation of this chapter. The provisions of this section, relating to the importation of neat cattle for dairy or breeding purposes, shall not apply to cattle imported into this state at a point where there is federal inspection, so far as the same shall relate to making advance reports to the commissioner of agriculture. But parties importing or receiving such cattle at such places shall give such information to the commissioner of agriculture as he may from time to time request relative to such cattle so imported or brought in. (*As amended by chapter* 240, § 1, *and chapter* 312 *of the Laws of* 1909.)

Separate violation.

Exceptions.

Information to commissioner.

§ 91. **Commissioner to issue notice.** He shall issue and publish a notice, stating that a specified infectious or contagious disease exists in the state or in any designated county or other geographical district of the state, and warning all persons to seclude in the premises where they may be at the time, all animals within the state or within such county or district or an adjoining county or district, that are of a kind susceptible to contract such disease, and ordering all persons to take such precaution against the spreading of the disease, as the nature thereof may in his judgment render necessary or expedient, and which he may specify in such notice. Such notice shall be published in such newspapers, and be posted in such manner as the commissioner may designate, and as, in his judgment, are most likely to give notice thereof. For this purpose he may post notices on public service poles other than those carrying wires transmitting electricity for light or power or fences upon the highway or buildings abutting upon the highway, provided, if such fences or buildings are privately owned, the owners thereof shall consent to such posting. No person shall tear down, mutilate, deface or destroy any such notice or order issued by the commissioner of agriculture and posted as provided herein during the pendency of said order or notice. (*As amended by chapter* 313 *of the Laws of* 1909.)

Seclusion of animals.

Publishing notices.

Posting notices.

Destroying notices.

§ 92. **Farms to be quarantined; inspection of premises.** The commissioner or an assistant commissioner or the chief veterinarian, shall order any premises, farm or farms where such dis-

Quarantine. ease exists, or recently existed, to be put in quarantine, so that no domestic animal be removed from or brought to the premises or places quarantined, and shall prescribe such regulations as he may judge necessary or expedient to prevent the communication of the disease by infection or contagion, in any way from the places so quarantined. Sanitation of stables. The commissioner may adopt and enforce rules regulating the sanitation of stables and other buildings used for the stabling of cattle for the purpose of preventing the existence and spread of infection and contagion among cattle. Inspection of stables. He may provide for the inspection and examination of all such stables and buildings. (*As amended by chapter* 315 *of the Laws of* 1909.)

§ 93. **Detention and destruction of animals.** The commissioner Detention of animals entering the state. or an assistant commissioner or the chief veterinarian may order all or any animals coming into the state to be detained at any place or places for the purpose of inspection and examination. The commissioner may prescribe regulations for the destruction of animals affected with infectious or contagious disease, and for Disposal of hides, etc. the proper disposal of their hides and carcasses, and of all objects which might carry infection and contagion. Whenever in his judgment necessary for the more speedy and economical suppression or prevention of the spread of any such disease, he may Destruction of animals. cause to be slaughtered, and to be afterward disposed of, in such manner as he may deem expedient, any animal or animals, which, by contact or association with diseased animals, or by other exposure to infection or contagion, may be considered or suspected to be liable to contract or communicate the disease sought to be suppressed or prevented. Tuberculosis. The commissioner may direct that an animal shall be condemned, quarantined or slaughtered as tuberculous, under the provisions of this article, if it shall be found to be tuberculous by a physical examination. Physical examination. If the owner of animals suspected of being tuberculous desires to have such animals Tuberculin test. tested with tuberculin and enters into written agreement with the state in the manner prescribed by the commissioner of agriculture, before such test is made, to the effect that he will disinfect his premises and either consent to the slaughter of the animals responding to such test, or hold them and their products in strict quarantine, pursuant to the directions of the commissioner of agriculture, such test shall be made by a medical or veterinary practitioner designated by the commissioner. The commissioner may also in his discretion order such tuberculin test to be made, and if the animal responds to such test, he may cause such animal to be slaughtered or held in strict quarantine. (*As amended by chapter* 315 *of the Laws of* 1909.)

§ 94. **Care of diseased animals; experiments.** If after examination an animal is, in the judgment of the person making the examination, suffering from tuberculosis, such animal shall be slaughtered under the provisions of this article, or, if the commissioner deems that a due regard for the public health warrants it, he may enter into a written agreement with the owner, subject to such conditions as the commissioner of agriculture may prescribe, for the separation and quarantine of such diseased animal or animals. Subject to the regulations of the department of agriculture, such diseased animal or animals may continue to be used for breeding purposes and its or their milk, after pasteurization at one hundred and eighty-five degrees Fahrenheit, may be used for the manufacture of butter or cheese or for sale. The young of any such diseased animal or animals shall, immediately after birth, be separated from their mothers, but may be fed the milk drawn from such affected animal or animals so separated and quarantined after such milk has been pasteurized as herein provided. The owner of a herd of cattle, within the state, may apply to the commissioner of agriculture for examination of his herd by the tuberculin test; said application to be in writing upon a blank form provided by the commissioner of agriculture and to include an agreement on the part of the owner or owners of the herd to improve faulty sanitary conditions; to disinfect his premises, should diseased cattle be found, and to follow instructions of the commissioner of agriculture designed to prevent the reinfection of the herd and to suppress the disease or prevent the spread thereof. The commissioner of agriculture shall, as soon as practicable, cause such cattle to be examined accordingly, subject to the provisions of this chapter. When the commissioner deems that the conditions warrant it he may make and issue to such owner a certificate that upon such examination such herd was found free from tuberculosis or that the owner has complied

Slaughter or quarantine.

Quarantined animals.

Young of diseased animals.

Application for tuberculin test.

Certificate of health of herd.

with the provisions of this section by causing all affected animals to be separated from the herd and quarantined as provided herein subject to the regulations of the department of agriculture. The commissioner of agriculture may determine the place of slaughter of an animal to be killed under the provisions of this chapter. The commissioner may experiment or cause such experiments to be made or performed as he may deem necessary to ascertain or determine the best methods or means for the control, suppression or eradication of communicable or infectious disease or diseases affecting domestic animals. No person shall sell any animal known to have a communicable or infectious disease except for immediate slaughter unless such sale be made under a written contract signed by both parties specifying the disease with which such animal is infected, a copy of which shall be filed in the office of the commissioner of agriculture. No person shall knowingly inject into any bovine animal as and for tuberculin any substance which is not tuberculin.

Place of slaughter.

Experiments.

Sale of diseased animals.

Substitute for tuberculin.

§ 95. **Employment of veterinary surgeons.** The commissioner may employ such and so many medical and veterinary practitioners and such other persons as he may, from time to time, deem necessary to assist him in discharging the duties imposed upon him by this article, and may fix their compensation, to the amount appropriated therefor. No animal shall be destroyed by the commissioner or by his order on the ground that it is a diseased animal, unless first examined by a veterinary practitioner in the employ of the commissioner or whose work is approved by the commissioner, nor until such practitioner renders a certificate to the effect that he has made such examination, that in his judgment such animal is affected with a specified infectious or contagious disease, or that its destruction is necessary in order to suppress or aid in suppressing such disease, or to prevent such disease, or to prevent the spread thereof, specifying the reasons for such necessity. (*As amended by chapter* 316 *of the Laws of* 1909.)

Assistants.

Compensation.

Animals destroyed only on certificate of veterinarian.

*§ 64-a. **Tuberculin, issuing certificates relative to tuberculin tested cattle, branding of tuberculous animals.** Any person using

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* This section erroneously numbered 64-a; apparently intended to follow § 95, which was § 64 of former Agricultural Law.

or injecting tuberculin into bovine animals for the purpose of determining whether they are affected with the disease known as tuberculosis, shall take the temperatures of such animals before, during and after such injections, according to the most approved methods, shall keep a correct record of such temperatures so taken and shall send a report within one week thereafter to the commissioner of agriculture giving a detailed account of the tests thus made, including the description of animals, the location of the farm or farms upon which tests were made and the name and address of the owner or custodian, and such other information concerning the use of tuberculin as may be called for by the commissioner of agriculture. A report of each such test so made shall be accompanied by a statement of the owner or person in charge giving the date upon which the said animals were last tested, if at all, and if known, with tuberculin, and the name and address of the person or persons making such test. If no such test has been made within four weeks, or if the animals were not treated in any manner for the purpose of preventing their normal reaction to tuberculin, then the report shall be accompanied by a statement setting forth such facts and the said statement shall be duly verified by the person making such statement. No person shall give a certificate showing or tending to show that an animal has been tested and found not affected with tuberculosis, unless the character of such test is stated and it was made in a proper way, and unless such animals failed to give a typical reaction. Any bovine animal in which tuberculosis is clearly diagnosed by a physical examination or a tuberculin test, or both, shall be branded upon the forehead or upon the right side of the neck from six to ten inches back of the jaw bone with a capital " T " not less than two inches high, one and one-half inches wide, with mark one-fourth of an inch wide; such branding shall not be construed as cruelty to animals within the meaning of the penal law; however, any animal which has reacted to the tuberculin test and appears physically sound may be retained for breeding or dairy purposes without such branding, provided a full description of such animal, sufficient for its identification and satisfactory to the commissioner of agriculture, is furnished to the commissioner of agriculture and a permit from said commissioner is issued for keeping such ani-

Taking temperature.

Record of temperatures.

Report to commissioner.

Previous test.

Certificate.

Branding tuberculous animals.

Exceptions.

Issuing permit for exemption.

mal in such manner. Such permit shall not be issued except upon the condition that the animal will thereafter be kept in a proper manner with regard to the protection of the public health and the health of other animals, and no such animal shall be sold or removed from the premises without written permission from the commissioner of agriculture, and all such animals shall be accounted for by the owner or custodian whenever called upon by the commissioner of agriculture to do so. All tuberculin sold, given away or used within this state, shall bear a label stating the name and address of the person or firm or institution making it and the date of preparation. All persons selling or giving away tuberculin shall report to the commissioner of agriculture the amount of tuberculin sold or given away, the degree of strength, the name and address of the person to whom sold or given and the date of delivery; said report shall include the address of and be signed by the person making it. Persons buying or procuring tuberculin shall not use or dispose of it until assured in writing by the person from whom the tuberculin is received that its delivery to said person has been reported to the commissioner of agriculture or unless they have themselves reported its receipt to the commissioner of agriculture with information required to be furnished by those who distribute tuberculin, and such persons buying or procuring tuberculin shall keep a correct record of the amount received, the amount used and the amount on hand and shall report these facts whenever any tuberculin is used, and if at any time tuberculin left on hand is not deemed fit for use or is not to be used, the said person shall forward the same to the commissioner of agriculture with a statement of where and when procured, the amount procured at the time, the amount of it that was used, and his name and address. If the amount forwarded to the commissioner of agriculture and the amount used does not total the amount procured or purchased a statement shall be made as to what became of the remainder. No person or persons shall treat any bovine animal with any material or substance nor in any manner for the purpose of preventing a normal reaction on the part of such animal to the tuberculin test. No person shall knowingly sell or offer for sale any animal that has reacted to the tuberculin test, without giving information of such reaction to the purchaser. No

Label for tuberculin.

Report of distribution of tuberculin.

Tuberculin accounted for.

Treatment to prevent reaction.

Sale of reacting animals.

animal that has reacted to the tuberculin test shall be sold or removed from the premises where the test was made without permission in writing from the commissioner of agriculture. Any veterinary surgeon violating any of the provisions of this section shall, in addition to the penalties and fines prescribed in the agricultural law, forfeit his certificate to practice and thereafter be debarred from practicing his profession within the state of New York until such disability is legally removed. (*As added by chapter* 588 *of the Laws of* 1909.)

Removal.

Penalties.

§ 96. **Regulations, the enforcement thereof and expenses incurred by sheriff.** The commissioner may prescribe such regulations as in his judgment may be thought suited for the suppression or the prevention of the spread of any such disease, and for the disinfection of all premises, buildings, railway cars, vessels, and other objects from or by means of which infection or contagion may take place or be conveyed. He may alter or modify, from time to time, as he may deem expedient, the terms of all notices, orders and regulations issued or made by him, and may at any time cancel or withdraw the same. He may call upon the sheriff, under sheriff or deputy sheriff, to carry out and enforce the provisions of any notice, order or regulation which he may make, and all such sheriffs, under sheriffs and deputy sheriffs shall obey and observe all orders and instructions which they may receive from him in the premises. In all counties, the expenses incurred by the sheriff, under sheriff or a deputy sheriff in carrying out and enforcing the provisions of such notice, order or regulation shall be a county charge, to be audited and paid in the same manner as other charges by the sheriff, under sheriff or deputy sheriff, including in this requirement any county affected by a local or special act relating to the sums payable by the county for compensation or disbursements, or both, to its sheriff, under sheriff or any deputy sheriff; and no such local or special act shall be effectual to prevent the payment of the expenses herein made a county charge over and above any other sum or sums, fixed or otherwise, provided in such act to be paid by the county to the sheriff, under sheriff or deputy sheriffs for compensation or to cover expenses, or both, and notwithstanding any provision of any such act relieving

Regulations for suppression of disease.

Modification of notice.

Sheriff to enforce.

Expense incurred by sheriff.

the county from charges imposed by law which are incurred by its sheriff, under sheriff or a deputy sheriff. If the commissioner shall lay a quarantine upon a city or any portion thereof he may call upon the commissioner of public safety and the police department of said city to enforce the provisions of any notice, order or regulation which he may make within the quarantine district or such portion thereof as lies within the city limits, and the commissioner of public safety and the police department shall obey and observe all such orders and instructions so made or issued, and all expenses incurred by the commissioner of public safety and the police department in enforcing the quarantine as herein provided shall be a city charge. If the commissioner shall quarantine any particular district or territory for the purpose of stopping or preventing the spread of the disease known as rabies, and if any dog be found within the said quarantine district in violation of said quarantine or regulation, any person may catch or cause to be caught such dog and have him impounded or confined. If the said dog is thereafter not found to be affected with the disease known as rabies, it may be released to the owner upon payment of a penal sum of ten dollars to the commissioner of agriculture, who shall upon receipt and acceptance of the same issue to the said owner a release which shall entitle the said owner to the possession of said dog. If such penalty is not paid within three days after said dog is impounded, or if it is found impracticable after reasonable effort to catch and impound such dog within the said quarantine district in violation of said quarantine or regulation, or to find the owner of a dog so impounded, then any person may kill or cause to be killed such dog and shall not be held liable for damages for such killing. For the purpose of enforcing the provisions of this article the commissioner of agriculture, his appointees and employees shall be considered as peace officers and shall have all the rights and powers of peace officers. (*As amended by chapter* 255 *of the Laws of* 1911.)

Police to enforce.

Expense incurred by police.

Dogs in violation of quarantine.

Release.

Provisions for killing

Powers of peace officers.

People ex rel. Baumann v. Lyon, 77 Misc. 377; 136 N. Y. Supp. 534.

Fines.

§ 97. **Fines and penalties.** Any person violating, disobeying or disregarding the term of any notice, order or regulation issued or prescribed by the commissioner under this article shall forfeit to the people of the state the sum of not less than fifty dollars nor more than one hundred dollars for every such violation. Any person violating, disobeying or disregarding the terms of any notice, order or regulation issued or prescribed by the commissioner under this article shall be guilty of a misdemeanor and shall be fined not less than fifty dollars nor more than one hundred dollars for each separate offense or by imprisonment of not less than one month nor more than six months, or by both such fine and imprisonment, except that in the case of rabies he shall be fined not less than ten dollars nor more than one hundred dollars for each offense or by imprisonment of not less than one month *not more than six months, or by both such fine and imprisonment. (*As amended by chapter* 352 *of the Laws of* 1909.)

Penalties.

Rabies violation.

People v. Shields, 142 App. Div. 194.

§ 98. **Bureau of veterinary service; chief veterinarian; appraisers.** There is hereby established in the department of agriculture a bureau of veterinary service. The bureau shall be in charge of a chief veterinarian, who shall be an experienced veterinarian appointed by the commissioner of agriculture. He shall receive an annual salary of three thousand dollars and all necessary traveling and other expenses incurred in the performance of his duties. Such chief veterinarian or other veterinarians employed by the commissioner shall have all the powers of an appraiser of condemned animals under this article. The chief veterinarian shall, under the direction of the commissioner of agriculture, have general charge of the enforcement of the provisions of this article, and shall collect and disseminate through farmers' institutes or otherwise, as the commissioner may direct, information and statistics in relation to the diseases of domestic animals, the proper care and sanitation of stables and other buildings used for the stabling of farm animals for the purpose of preventing the existence and spread of infectious and contagious diseases, the methods of feeding, the methods of improving the breed or milking qualities of cattle, and such other matters as the commissioner may direct. All veterinarians in the state shall immediately report to the commissioner of agriculture the existence among animals of any in-

Chief veterinarian.

Appointment.

Compensation.

Duty and powers of veterinarians.

Report of disease.

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* So in the original.

fectious or communicable disease coming to their knowledge. The report shall be made in writing and shall include a description of the diseased animal or animals, the name and address of the owner or person in charge of the animal, if known, and a statement as to the location of the animal. No person shall conceal or attempt to conceal any animal suffering from an infectious or communicable disease so that the same shall not come to the knowledge of the commissioner of agriculture. The commissioner of agriculture may appoint and at pleasure remove two confidential agents at salaries not to exceed eighteen hundred dollars, to be fixed by the commissioner, to assist in carrying out the provisions of this article. He may appoint and at pleasure remove one state appraiser of condemned animals, who shall be a person of experience and well acquainted with the value of farm animals; and shall receive an annual salary of fifteen hundred dollars, and all necessary traveling and other expenses incurred in the performance of his duties. The commissioner of agriculture may employ from time to time such additional appraisers of condemned animals as the work of his department may necessitate, who shall receive compensation at the rate of five dollars per diem and all traveling and other expenses necessarily incurred while engaged in the performance of their duties.

Concealment of disease.

Confidential agents.

State appraiser.

Additional appraisers.

§ 99. **Appraisal of diseased animals.** An appraiser shall determine the value of each animal directed to be slaughtered. Such value shall be the market value of such animal at the time of making the appraisement, but the appraisal value of each bovine animal shall not exceed the sum of one hundred and twenty-five dollars, provided however that the appraised value shall not exceed the sum of seventy-five dollars, except for registered thoroughbred animals, and the appraisal of each equine animal shall not exceed the sum of one hundred and twenty dollars. If the value of the condemned animals determined by the appraiser is not satisfactory to the owner of such animals, the value shall be determined by arbitrators, one to be appointed by the state appraiser and one by the owner of the animals. If such arbitrators are not able to agree as to the value of the animals, a third arbitrator shall be appointed by them. The value determined by such arbitrator

Appraised value.

Arbitration of value.

Payment of arbitrators.

Powers of arbitrators.

shall not exceed the limits established by this article and, after approval by the commissioner of agriculture, shall be final. The arbitrators selected by the owner of the animals shall be paid by the said owner, the other arbitrator or arbitrators shall be paid by the state at a rate of compensation not to exceed five dollars per day and necessary expenses. Such appraiser of condemned animals and the arbitrators appointed under this section may administer oaths to and examine witnesses. (*As amended by chapter* 314 *of the Laws of* 1909 *and by chapter* 670 *of the Laws of* 1910.)

Certificate.

Statement of value.

Form and contents.

§ 100. **Certificate of appraisal.** The appraiser shall execute and deliver to the owner of the condemned animals a certificate verified by him stating the appraised value of such animals; if such value was determined by arbitrators, there shall be attached to such certificate a statement of the value so determined, signed and verified by at least two of the arbitrators. The form and contents of such certificates shall be prescribed by the commissioner of agriculture.

Post-mortem examination.

Statement of result.

Form of statement.

Verification of statement.

§ 101. **Post-mortem examination of animals.** All animals suspected of being tuberculous or glandered, and killed therefor, shall be examined by a medical or veterinary practitioner designated by the commissioner for the purpose of determining whether or not such disease existed in such animals. There shall be attached to the certificate of appraisal, a statement of the result of such examination, describing the animals found to be tuberculous or glandered and those which were found not to be tuberculous or glandered. The form of such statement shall be prescribed by the commissioner of agriculture. Such statement shall be verified by the veterinary or medical practitioner making the examination. (*As amended by chapter* 314 *of the Laws of* 1909.)

Payment when not diseased.

§ 102. **Compensation of owners of animals destroyed.** The actual appraised value at the time they are killed of all animals killed under the provisions of this article, which shall be found upon a post-mortem examination not to have had the disease for which they were killed, unless the same were killed on account of

Payment when diseased.

Glanders.

Tuberculosis.

Disposal of meat.

Payment for keeping condemned animals.

Refusal of compensation.

the violation of quarantine regulations, shall be paid to the owners of such animals. If such animals are found, upon post-mortem examination, to have been suffering from glanders then they shall be paid for in the manner following: If an animal has glanders, not manifest by clinical symptoms, the owner thereof shall be paid eighty per centum of the appraised value. If the animal has glanders showing clinical symptoms, the owner thereof shall be paid therefor fifty per centum of the appraised value. If such animals are found upon post-mortem examination to have been suffering from tuberculosis, then they shall be paid for in the manner following, to wit: If an animal has localized tuberculosis, the owner thereof shall be paid eighty per centum of the appraised value. If the animal has generalized tuberculosis, the owner thereof shall be paid therefor fifty per centum of the appraised value, but no animal slaughtered under the provisions of this article shall be paid for as herein provided, unless the said animals shall have been within the state for a period of at least six months if suffering from tuberculosis or twelve months if suffering from glanders. If the meat of the slaughtered bovine animal shall be passed for use as food, under official regulations, the commissioner of agriculture is hereby authorized to sell the same and the proceeds from the sale of the meat, hide and other marketable parts of the said animal shall be paid into the state treasury. For each and every day the owner or custodian of the animals condemned is obliged to keep them, in excess of seven days from the date of the condemnation, he shall be allowed and paid the sum of twenty-five cents per day per head. The certificate of appraisal, and the statement of the result of the post-mortem examination, shall be presented by the owner or his legal representatives or assigns, to the commissioner of agriculture. The commissioner of agriculture shall issue his order for the amount due as shown by such certificate and statement, after he has found them to be correct, which shall be paid by the state treasurer on the warrant of the comptroller out of moneys appropriated therefor. No compensation shall be made to any person who has wilfully concealed the existence of disease among his animals or upon his premises, or who in any way by act or by wilful neglect has contributed to spread the disease sought to be suppressed or prevented, nor for any animal which upon a post-mortem examination is found to have the disease on account of which it was slaughtered or any dangerously contagious or infectious disease that would warrant the destruction of such animal, except as herein provided. (*As amended by chapter* 314 *of the Laws of* 1909.)

§ 103. **Expenses.** All expenses incurred by the commissioner in carrying out the provisions of this article and in performing the duties herein devolved upon him shall be audited by the comptroller as extraordinary expenses of the department of agriculture, and paid out of any moneys in the treasury appropriated for such purposes.

(Sections 104 and 105 *repealed by chapter* 232 *of the Laws of* 1909.)

Sale of calves.

Shipment of calves.

Presumption

Method of shipping.

§ 106. **Shipping, slaughtering and selling veal for food.** No person shall slaughter or expose for sale, or sell any calf or carcass of the same or any part thereof, unless it is in good healthy condition. No person shall sell or expose for sale any such calf or carcass of the same or any part thereof, except the hide, unless it was, if killed, at least four weeks of age at the time of killing. No person or persons shall bring or cause to be brought into any city, town or village any calf or carcass of the same or any part thereof for the purpose of selling, offering or exposing the same for sale, unless it is in a good healthy condition, and no person or persons shall bring any such calf or carcass of the same or any part thereof except the hide into any city, town or village for the purpose of selling, offering or exposing the same for sale, unless the calf is four weeks of age, or, if killed, was four weeks of age at the time of killing, provided, however, that the provisions of this section shall not apply to any calf or carcass of the same or any part thereof, which is slaughtered, sold, offered or exposed for sale, for any other purpose than food. Any person or persons exposing for sale, selling or shipping any calf or carcass of the same will be presumed to be so exposing, selling or shipping the said calf or carcass of the same for food. Any person or persons shipping any calf for the purpose of being raised, if the said calf is under four weeks of age, shall ship it in a crate, unless said calf is accompanied by its dam. Any person shipping calves under four weeks of age for fertilizer purposes must slaughter the said calves before so shipping. Any person or persons duly authorized by the commissioner of agriculture may examine any calf or veal offered or exposed for sale or kept with any stock of goods apparently exposed for sale, and if such calf is under four weeks of age, or the veal is from a calf killed under four weeks of age, or from a calf in an unhealthy condition when killed, he may seize the same and cause it to be destroyed and disposed of in such manner as to make it impossible to be thereafter used for food. The penalties and fines provided in section fifty-two of the agricultural law shall apply to violations of this section except that the minimum penalty for violations of this section shall be, for the first violation, one dollar for each calf, and, for the second violation, ten dollars for each calf, and the minimum fine for first offense shall be one dollar and for second offense ten dollars. (*As amended by chapter* 561 *of the Laws of* 1910.)

Calves for fertilizer purposes.

Seizure of calves and veal.

Penalties.

People v. Bishopp, 106 App. Div. 266, 94 N. Y. Supp. 773, 128 N. Y. St. Rep. 773; People v. Dennis, 114 N. Y. Supp. 7; People v. Sayre (not reported); People v. Wright, 103 App. Div. 218, statute presumptively constitutional; Williams v. Rivenburg, 129 N. Y. Supp. 473.

§ 107. **Shipping veal.** It shall be unlawful for any corporation, partnership, person or persons to ship to or from any part of this state any carcass or carcasses of a calf or calves or any part of such carcass except the hide, unless they shall attach to every carcass or part thereof so shipped, in a conspicuous place, a tag, that shall stay thereon during such transportation, stating the name or names of the person or persons who raised the calf, the name of the shipper, the points of shipping and the destination and the age of the calf.

§ 108. **Receiving veal for shipment by common carriers.** No railroad company, express company, steamboat company or other common carrier, shall carry or receive for transportation any carcass or carcasses of calves, or any part of the same except the hide, unless the said carcass or carcasses or parts thereof shall be tagged as herein provided.

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

UNIVERSITY OF ILLINOIS
AUG 21 1915

CALVIN J. HUSON, Commissioner

CIRCULAR 90

PROVISIONS OF THE AGRICULTURAL LAW RELATING TO VINEGAR

1913

ARTICLE 4,* Adulterated Vinegar

Section 70. Definition of cider vinegar and adulterated vinegar.
71. Manufacture and sale of adulterated or imitation vinegar prohibited.
72. Packages containing vinegar to be branded.
73. Facts published.

§ 70. **Definition of cider vinegar and adulterated vinegar.**— The term "cider vinegar" as used herein shall be construed to mean vinegar made exclusively from pure apple juice. All vinegar which contains any proportion of lead, copper, sulphuric acid or other ingredients injurious to health, or any artificial coloring matter, or which has not an acidity equivalent to the presence of at least four per centum, by weight, of absolute acetic acid, or cider vinegar which has less than such an amount of acidity, or less than two per centum of cider vinegar solids shall be deemed adulterated. (*As amended by chapters* 210 *of the Laws of* 1909 *and* 26 *of the Laws of* 1912.)

§ 71. **Manufacture and sale of adulterated or imitation vinegar prohibited.** — No person shall manufacture for sale, keep for sale or offer for sale:

1. Any adulterated vinegar.
2. Any vinegar or product in imitation or semblance of cider vinegar, which is not cider vinegar.
3. As or for cider vinegar, any vinegar or product which is not cider vinegar.

§ 72. **Packages containing vinegar to be branded.**—Every manufacturer or producer of vinegar shall plainly brand each cask, barrel, or other container of such vinegar with his name and place of business, the kind of vinegar contained therein and the substance or substances from which it was made. And no person shall mark or brand as or for cider vinegar any package containing that which is not cider vinegar. Every person who sells any vinegar, except it be delivered to the purchaser in the unbroken package in which such seller received it, shall plainly and conspicuously mark or brand the receptacle or container in which such vinegar is delivered to the purchaser, whether such receptacle or container be furnished by the seller or purchaser, with a label showing the kind of vinegar so delivered and the substance or substances from which it was made. Nothing herein shall be deemed to prohibit the sale of cider vinegar stock, provided it be sold as and for such and in compliance with the provisions of this article as to marking or branding. The term "cider vinegar stock" when used herein, shall be construed to mean acetified apple juice of less acidity than that required for vinegar which contains not less than two per centum of apple solids and sufficient alcohol to develop the acidity required in vinegar. (*As amended by chapter* 210 *of the Laws of* 1909 *and chapter* 228 *of the Laws of* 1911.)

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* Laws of 1909, chapter 9, article 4 (chapter 1 of the Consolidated Laws)

§ 73. **Facts published.**— The commissioner of agriculture shall publish the name and business address of each person, firm or corporation convicted of a violation of this article, with such statement of the facts of the violation as he may deem proper. (*As amended by chapter* 156 *of the Laws of* 1910, *passed April* 23, 1910.)

* § 52. **Penalties.**— Every person violating any of the provisions of this chapter, shall forfeit to the people of the state of New York the sum of not less than fifty dollars nor more than one hundred dollars for the first violation and not less than one hundred dollars nor more than two hundred dollars for the second and each subsequent violation. When such violation consists of the manufacture or production of any prohibited article, each day during which or any part of which such manufacture or production is carried on or continued, shall be deemed a separate violation. When the violation consists of the sale, or the offering or exposing for sale or exchange of any prohibited article or substance, the sale of each one of several packages shall constitute a separate violation, and each day on which any such article or substance is offered or exposed for sale or exchange shall constitute a separate violation. When the use of any such article or substance is prohibited, each day during which or any part of which said article or substance is so used or furnished for use, shall constitute a separate violation, and the furnishing of the same for use to each person to whom the same may be furnished shall constitute a separate violation. Whoever by himself or another violates any of the provisions of articles three, four, six, eight and nine or sections three hundred fourteen and three hundred fifteen of this chapter or of sections one hundred six, one hundred seven and one hundred eight of this chapter shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than fifty dollars, nor more than two hundred dollars, or by imprisonment of not less than one month nor more than six months or by both such fine and imprisonment, for the first offense; and by six months' imprisonment for the second offense.

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* Extract from Article 3.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

UNIVERSITY OF ILLINOIS
AUG 21 1915

Circular 91

SUMMARY OF PROCEEDINGS

of the

Fifteenth Annual Normal Institute for New York State Workers

held at

Ithaca, N. Y., November 24 to 26, 1913

This circular is intended for farmers' institute lecturers and any others interested. It contains a summary of the facts presented by the workers of the New York State College of Agriculture at Ithaca and the New York Agricultural Experiment Station at Geneva, supplemented by the experiences of institute workers and others engaged in agricultural work, and the facts herein set forth form the basis of the teachings of the farmers' institute workers and farm bureau agents with reference to the subjects covered for the season of 1913–14.

EDWARD VAN ALSTYNE,
Director of Farmers' Institutes.

FACTS RELATING TO DRAINAGE

Professor E. O. Fippin

There is nearly as much land in New York State that needs drainage this year as last.

Circular No. 70 of the New York State Department of Agriculture contains in brief form facts relating to drainage.

Estimates made by the college at various times have been that from 30 to 75 per cent. of the land in the different counties of the state needs more or less drainage.

Land that did not need drainage thirty years ago may need it very seriously now. Continued tillage and more or less careless methods of handling the land, may remove the organic matter from the soil and more drainage is needed.

If water remains in the soil 48 hours or longer, within the root period (3 feet), the productive capacity of the land is reduced and it needs drainage. The ideal would be to have a soil that is thoroughly well drained three feet all the year around. To determine the need of drainage, dig holes in the soil two or three feet deep and see if they fill with water and remain filled.

An uneven color of the subsoil is generally an indication of defective drainage, because it means defective ventilation which is a result of an excess of water.

The drainage of land by frequent dead-furrows is expensive because of the land wasted, the low efficiency of the drainage afforded, and the inconvenience afforded in farming such land.

Valuable statistical data relating to drainage is given in the back of Cornell Bulletin No. 254, "Drainage in New York;" also in Vol. 1, "Proceedings of the N. Y. State Drainage Association, for the years 1910-11."

Ontario Department of Agriculture Bulletin No. 174 gives figures relating to benefits derived from drainage, that are very good.

Unless there is a spring tapped by the system, causing the water to run in the drain throughout the year, so the plant roots seek the drains for water, there will probably be no trouble from alfalfa or tree roots entering tile drains.

As a general rule nothing smaller than a three inch tile should be used; never anything less on flat land. It may be permissible on pretty good hillsides to use a two inch or two and one-half inch tile.

Methods of Construction.— The most economical machine for the small farmer who is limited in means and is doing a small amount of drainage is a two-horse ditching plow, costing from $8 to $12.

The Cyclone ditcher is a practical and economical machine on the heavier grades of soil relatively free from stone. A ditch was dug in Jefferson County with this machine at a cost of 10 cents per rod — depth of ditch from two and one-half to three feet.

Depth of Ditching.— Tile should be from two and one-half to three feet deep in ordinary soil. In very heavy clay it may be permissible or advisable to put them in a little more shallow — say eighteen inches. This may apply where an impervious subsoil runs near the surface. There is not much use to go deep into the hardpan.

It is a risky thing to put stones over tile. Water is liable to wash out the tile. Gravel is superior to stones.

Would generally recommend the use of dense, vitrified, hard-burned tile. If this kind of tile is used, they may be put within the frost line without danger from freezing.

Lime in tile should always be avoided.

Grade.— The grade may be very small, as low as 1 inch to 100 feet, and yet tile will work. The smaller the grade, the greater the accuracy required in construction of the drain.

Cement Tile.— A good grade of cement tile can be made,— perhaps better than poor clay tile; but we cannot make a cement tile as good as the best clay tile and there is always a considerable element of risk due to the fact that each tile is made individually by workmen, and the failure of one tile may destroy the line. If a man has the different materials, it may pay to make cement tile. There is relatively more economy in cement tile in the large sizes than in the small.

Formula for Cement Tile.— Best results have been obtained from a mixture of one part cement to three parts sand. The richer the mixture, and the more moist it can be handled, the better will be the tile.

Water from acid soils and especially soils rich in organic matter will injure cement tile. There is the avidity of the soil for lime and it would tend to take it from the concrete mixture. If farmers are making their own tile and making it economically, it should not be discouraged.

Dynamite.— The use of dynamite is an effective method of drainage only where it breaks through an impervious subsoil to a pervious layer below. On the great majority of land in New York State, dynamite is not an effective agent.

FACTS RELATING TO LIME

Dr. L. L. Van Slyke

Certain crops may be grown successfully on what are known as acid soils.

Cranberry and blueberry crops can be grown successfully on acid soils. Among our common berry crops which tolerate a certain amount of acidity are the strawberry, blackberry and raspberry, including both red and black varieties.

The potato crop is tolerant to a certain amount of soil acidity. An alkaline condition tends to produce potato scab.

Among the grain crops more or less tolerant to soil acidity are rye, millet, buckwheat, oats and corn. An application of lime to these crops, however, may be beneficial in liberating certain plant foods.

Most of the grasses are very sensitive to acid but there is one grass not at all sensitive, and that is the red top.

Among the root crops, carrots are not so sensitive to an acid condition as to prevent a good crop, or the common turnip, although rutabagas are sensitive to acid.

We have in particular been teaching the sensitiveness of the leguminous crops to soil acidity. Fortunately, there are some leguminous crops that can be grown on soils more or less acid. Among these are the cow pea and hairy vetch. Crimson clover and soy beans are also capable of showing good growth on soils somewhat acid. Alsike clover is apparently one of the clovers more or less sensitive to acidity. Timothy is very sensitive to acid.

There is no objection to the use of lime on corn land and there might be a decided advantage to the crop by the application of lime to such land, due to its effect in liberating plant food and on the mechanical condition of the soil. This is probably true of all the grains.

A moderate application of lime two or three years previous, to the clover crop, will have a marked effect in improving that crop and yet it would not have the effect of making conditions favorable for the development of scab in the potato crop.

It is safe to continue to advise farmers that where it is as cheap or cheaper and more convenient to use the quicklime, use it under the precautions that are ordinarily given, i. e. smaller amounts.

Quicklime must be used with greater precaution on light sandy soils than on heavier soils. It is conceivable that on light soils containing a considerable amount of ammonia forming materials, quicklime in excessive amounts might cause loss of such ammonia forming compounds, but on the heavier soils there would be no danger.

Where it seems necessary to apply quicklime and manure at very nearly the same time, it is equally necessary that the two should be mixed with the soil. It is preferable not to apply both lime and manure at the same time. It is better to apply them as far apart as possible, convenient to the system of cropping.

It is not good policy to apply ground limestone in drop behind cows, particularly in warm weather. It does not possess any special absorptive qualities. There would be a very serious loss in applying slaked lime in the gutters.

Magnesium Limestone.— There is little reason to believe that the application of the amount of magnesium we use will do any harm. The amount is comparatively small. If farmers have been using magnesium limestone with good results, let them continue to do so.

FACTS RELATING TO LIME

Professor E. O. Fippin

Size.— Definition of 10-mesh screen lime. Lime which will pass through opening 1/10 inch in diameter.

Lime carbonate which is coarser than 1/50 inch is of very low value, and lime carbonate which is coarser than 1/20 inch is practically useless so far as any effect on the soil is concerned within a period of 5 years. In the course of a rotation, material 1/50 inch may be as effective as finer. From 1/20 inch to 1/50 inch material is one-half as available as material that will pass a finer screen. Any material coarser than 1/20 inch should be disregarded.

A very good small screen for screening lime is made by the Central Scientific Company, Chicago, Ill.

Prof. Fippin's test for lime or sweetening material in soils: Hydrochloric or muriatic acid diluted one to five times. Pour quantity of acid upon soil to be tested. If there is evidence of any general effervescence, lime is unnecessary.

Solvay lime is guaranteed to carry at least 65 per cent. oxide and is very fine. Rock cut stone is about 50 per cent. oxide, but some of it is coarse.

FACTS RELATING TO COMMERCIAL FERTILIZERS

Dr. W. H. Jordan

Experiments made at the Station do not show that soil needs as to fertility can be measured by the composition of the crop.

So far as the fineness of phosphoric rock is concerned, we should insist on the experimental evidence we have, that it be very fine material.

The availability of the undissolved rock is partially a question of the type of plant with which it is to be used. It has been found that there is a very great difference in the way in which different classes of plants will take hold of the ground undissolved rock. Rape, cabbage and that class of plants have uniformly made pretty nearly as good use of the undissolved rock as they have of the dissolved rock, whereas timothy and barley have failed to make very much use of it in the length of time that the plant has had to utilize the material at hand.

It has not been proved that the efficiency of the raw phosphatic rock is increased by mixing it with manure.

Where quick and immediate growth is needed with vegetables and quickly growing crops, it is safe to advise the use of acid phosphate as against the raw rock.

A large number of experiments have been made at the State Experiment Station to determine the relation of various methods of soil analysis to measurements of fertility. Taking the soils of New York State today, we have no method in the laboratory of telling a man what fertilizers to use. We can make a determination of everything in a soil, but we cannot tell what a plant can use.

Sulphur.— I am a bit skeptical as to the place sulphur occupies in our commercial fertilizers.

Station bulletin will be received from the printer very soon regarding analysing soils. Each farm bureau man and institute worker should be supplied with a copy of same.

Potash.— Farmers will do well to consider whether they are not buying more potash than they need.

Experiments.— When experience is given to you by farmers, when they say they have so and so, determine whether the experiment is a logical one. No experiments are logical except when the conditions are all the same outside of the one thing you are testing.

Home Mixing of Fertilizers.— You can take dried blood, nitrate of soda, sulphate or muriate of potash, and acid phosphate, and put together a fertilizer that is just as efficient in every way as one made by a fertilizer manufacturer containing the same proportion of ingredients. If the farmer buys good materials and mixes them, it is just as efficient as if the fertilizer manufacturer does it. With low grade materials, a fertilizer manufacturer may be able to obtain better results, if he uses the "wet" method of manufacture. Nitrate of soda should be used as needed and not in too large quantities at one time. Fall applications of nitrate of soda are not advisable.

LEGUMINOUS PLANTS

Professor J. L. Stone

First of all, regarding the feeding of our domestic animals, the forage crops as grown in New York State are strong in carbohydrates but weak in protein. It is also true that the feeds we buy to balance our home grown rations, those that are rich in protein, are high-priced, while those which are not rich in protein are not so high-priced. At the present time there is less difference than formerly. If the farmer could balance his ration from material grown on the farm, he would save his pocketbook a great task. Leguminous plants give us a more nearly balanced ration.

Nitrogen is the element of fertility that is first of all likely to become deficient. It is the element that produces results, when it is needed, in a more marked way than almost any other plant feed.

The growing of legumes affects the feeding problem by reducing the feed bills to a considerable extent. It affects the fertilizer problem by making it unnecessary to purchase so much high-priced nitrogen.

I am satisfied that there is no one problem that affects the agricultural condition of the state, as that of maintaining the organic matter in the soil. The organic matter in the soil has a wonderful influence upon its physical character as well as upon the amount of plant food the soil can supply to the growing crop. The maintenance of an abundant amount of organic matter in the soil is perhaps the biggest problem the farmer is up against at the present day. I am satisfied that to reduce it to its simplest problem, the question of getting good crops out of the land today is the question of getting into the soil a sufficient amount of organic matter.

So the three factors then that make this problem of the growth of legumes important are: The protein supply in our stock foods, the nitrogen supply as a part of the plant food of the soil, and the organic matter of the soil as a means of maintaining the physical condition of the soil and also as a help toward the nitrogen supply of the soil.

The ordinary way of maintaining fertility is by the application of stable manure. If we had enough stable manure to meet all these demands we might snap our fingers at almost everything else. Give a man all the stable manure he cares to use and success attends his efforts. However, an adequate supply of stable manure is not within reach and I do not believe it can be brought within reach. The keeping of animals up to the point where we can dispose of animal products profitably will not produce manure enough to meet the situation. It therefore comes to this, that very soon we will be studying seriously this problem, " How shall we maintain the productivity of our soil independent of animal husbandry?" It is out of the range of possibility to produce enough manure to meet the needs of the soils of the United States in stable manure. We must look to other things. The leguminous plants are of great interest to us then, because they combine the organic matter in the soil with the supply of nitrogen, which is perhaps an equally important matter.

There are certain crops under certain conditions which will serve our purpose better than legumes. There are certain crops that are cheaper than legumes. There has been a great deal of wrong advice given to sow clover seed where clover will not grow. Very evidently the proper advice would be to start with a plant that will grow and will do some business. Where the farmer has arrived at the point where he can apply a legume to increase the fertility of his farm, he should do so because it will be increasing the actual available supply of nitrogen at the same time he is increasing the organic matter in the soil.

Rhode Island Experiment Station Bulletin No. 147 gives summary showing amount of accumulation of nitrogen in the soil by the growing of leguminous plants.

Institute workers are also referred to Cornell Experiment Station Bulletin No. 294, "A Heretofore Unnoted Benefit from the Growth of Legumes."

Timothy grown with alfalfa contains a greater per cent. of protein than timothy grown alone. A legume crop is very good company for non-legumes to keep. It makes them better and makes the total crop larger.

Alfalfa Growing.— It is believed that there are many soils in the State of New York physically well adapted to the growing of alfalfa, that are situated too far north. There are certain places in the State where a hardy variety will be needed. Experiments are being made to find such a variety.

Would not advise spending much time with the cow pea or crimson clover in New York State.

LEGUMINOUS PLANTS

E. R. Minns

Soy beans can be grown wherever we can grow good corn. They can be grown on sour soil, as has been stated. The soy bean will withstand a wet period in the spring better than corn will; they will withstand drought as well as corn.

There is no uniformity of results in growing soy beans with corn. It is not believed any one will be pleased with results obtained if the soil will not grow good corn. You are sure of getting beans if you grow them alone and you are not sure if you grow them with corn.

The medium green variety is as yet the best to grow.

Where soy beans have not been grown before, would innoculate the beans, using pure cultures mixed with the seed. There will be plenty of nodules from pure culture inoculation but the nodules are near the stalk and not on the roots as when the soil is inoculated. The per cent. of nitrogen in the inoculated soy bean is about three per cent. higher than in those not inoculated. Cultures for inoculation may be obtained from the U. S. Department of Agriculture for the asking.

The seed beans are very valuable and if a sufficient yield of ripe beans can be obtained it might pay to grow them for seed.

Advise buying seed early in the season.

Advise early planting. Soy beans will stand as much and probably more frost than corn. Would plant as soon as corn. An early frost does not necessarily spoil the seed crop, as they can stand for a month and mature after such frost.

Hairy Vetch.—Pure hairy vetch is scarce and the price is high. Advise farmers to grow their own seed. The spring vetch seed may be told from the hairy vetch seed, as there is quite a little difference in the shape of the seeds of the two varieties. The hairy vetch seed is small and nearly round. The seed of the spring vetch will vary more in size and most of it is larger than the seed of the hairy vetch and somewhat flatter.

Vetch grows better where the ground has been limed, than where it has not been limed. The longer it is grown on the same soil the better it grows.

Vetch is a biennial plant. As a cover crop it will outgrow clover, where it has a good chance. It is a spiny leaf plant and does not take as much water out of the soil as does clover.

In northern New York would advise sowing winter vetch in oats in the spring, leaving the vetch to come on after the oats are cut.

Sweet Clover.—Sweet clover may be grown, if the lime supply is sufficient, where there is a lack of humus. It should not be grown where it is possible to grow alfalfa. It needs lime about as badly as alfalfa.

FACTS RELATING TO HORTICULTURE

Professor U. P. Hedrick

The Progress of Fruit Growing.— The speaker does not know what attitude entomologists and pathologists are taking in regard to the wormy and scabby apples of 1913. From a horticulturist's point of view there would have been much less infested and infected fruit had the work of spraying been done better and had the equipment been better. The use of poor nozzles is one of the chief causes of concern in spraying equipment.

Apples are poorly colored in western New York this year. Unfortunately we cannot tell fruit growers how to improve the color and not reduce the crop.

Plowing orchards in the fall is more and more practiced and with orchard fruits and on clay soils may well be recommended, not only because of the greater convenience of doing the work in the fall but it is beneficial to the soil.

A careful scrutiny of the fertilizer experiments of the country, especially of those in our own state, shows that lime is a relatively unimportant factor in the treatment of orchard soils. It becomes more and more apparent that plants differ greatly in their demands for lime. Most legumes thrive only on soil in which there is much lime. There are graduations all the way between the two extremes in the likes and dislikes of plants for lime. Our common bush tree and vine plants seem to be among those that need but little lime. It is certain that the small fruits at least, are often injured by applications of lime. On the other hand, it may be necessary to use lime for the leguminous cover crops now grown in all well managed orchards in this state.

Nineteen hundred and thirteen has brought forth nothing strikingly new as to fertilizers for fruits. Orchards on good farm land require comparatively little fertilizing if tillage is practiced and if cover crops are plowed under. In sodded orchards nitrate of soda is most markedly beneficial. Fruit growers may be advised to experiment carefully for a few years before entering on a regular, long continued plan of fertilization. A hit and miss application of any fertilizer is gambling pure and simple.

A cover crop which turns back less than two or three tons of vegetable matter is hardly worth the seed planted. Cover crops to be of value must be used annually and must be so planted and cared for as to turn back a considerable amount of vegetable matter. A cover crop of a few short, sparse plants per square foot, is not worth the trouble. Twenty pounds of winter vetch and from a half bushel to a bushel of oats or barley is probably the best cover crop.

Orchard heaters have proved their value in parts of the West but the first cost and cost of maintenance in our less intensive orcharding and inadequacy to protect trees in stresses of cold weather in the East, will probably prevent the use of orchard heaters in New York. The attention of those who grow fruits for home use and do not take the trouble to spray, may well be called to varieties of nearly all fruits that are measurably free from serious insect or fungous pests. Lists of fruit little or not at all attacked by specific diseases or insects, can be had from experiment stations.

Fruit growers everywhere are overcrowding plantations. The greater productiveness of single plants and of outside rows teach the value of planting thinly.

Several new fruits can be recommended to fruit growers. The Delicious apple in New York seems to be better as the bearing trees grow older. Opalescent deserves greater notice from fruit growers as a beautiful, well flavored, early winter apple. King David is as handsome and well flavored as Jonathan, and runs a little larger in size. It may prove profitable in parts of New York. Arp Beauty is the earliest good yellow peach. Of the score or more of peaches advertised to follow Elberta, Frances is the best on our grounds. Miss Lola fills a gap in the peach procession that makes it valuable in this state. It follows Greensboro and precedes Champion, being as good, if not a little better, than either. Middleburg can be recommended for home orchards as a very late plum of good quality, almost immune to black knot and brown rot. The Schmidt cherry is becoming the leading black, sweet cherry for markets in many parts of the state. The Eclipse is the only new grape in a collection of over 400 that we can unqualifiedly recommend fruit growers to test. The June raspberry, a Station seedling sent out several years ago, is equal and often superior to the best of the old varieties and ripens on our Station grounds as no other raspberry does, in June. Plum Farmer makes the best showing of any black raspberry on the Station ground. The Perfection and Diploma currants are both well worth growing in the currant growing sections of the State. The Poorman gooseberry is a most promising new gooseberry for commercial plantations. Prolific, a Station seedling strawberry, and Chesapeake, are the most promising of the new strawberries.

All reports emphasize the superiority of the Mazzard over the Mahaleb as a stock for cherries. The latter dwarfs the tree, makes it short-lived and less productive. The tree is more easily grown on the Mahaleb and only insistent demands on the part of the fruit grower will make nurserymen grow cherries on the proper stock—the Mazzard.

For several years it has been said that sour cherries were being over planted. The demand for uncanned sour cherries in the large markets seems to be increasing greatly and over-production is not now as imminent as we have thought.

Great progress is being made in canning and evaporating horticultural products whereby fruits so preserved are cheaper and more attractive in appearance and quality. This helps to put off the evil day of over-production, which we all fear.

It is of interest to note that about seventy varieties of European grapes have borne good crops on the Station grounds three years in succession. These three years cover the coldest winter, the hottest summer and the driest summer in a quarter century. We may yet be able to compete with California in growing Vinifera grapes.

Talk continues about the value of pedigreed fruit trees, but there are as yet no facts to substantiate the theories of those who advocate pedigreed trees. Nothing is more certain than that the characters of fruits are much modified by soil, climate and care, and characters so modified are not handed down unchanged through seeds, buds or cions. In particular, size of fruit, productiveness of plant, flavor and all that goes to make the fruit valuable, are chiefly modified by man-given conditions. Until a nurseryman shows that a particular character which he supposes gives extra value to his pedigreed plant passes unchanged through several tree generations, a tree unadorned with a pedigree is quite as valuable as one advertised as having the most illustrious descent. Much more to the point is the business pedigree of the nurseryman who advertises pedigreed stock.

Many varieties of fruits are not adapted to the wide range of conditions. For this reason new varieties should be tested in a small way in any region before they can be recommended for commercial plantings.

There is a good deal of talk about varieties of fruits wearing out or running out. Fruit growers can be reassured that varieties of fruits do not run out. Under abnormal treatment, especially neglect, they may seem to run out, but under good care, so far as is now known, varieties have no limit of duration.

Apple trees in sod produce better colored apples than those tilled. The crop will be reduced, however. At the present time apples of good color will not bring any better prices than those not so well colored. In sodded orchards nitrate of soda is most beneficial.

If a man can so manage his spring work that he can let his cover crop grow until about the middle of May, if he has a cover crop like vetch, it is far better; otherwise, it is better to plow under in the early spring.

In fall plowing, plow toward the trees. Also, for young trees mound up the earth 8 or 10 inches around trees late in the fall and remove this mounding early in the spring.

List of fruits free from ordinary plant diseases and insect pests may be had from the Geneva Experiment Station. Institute workers should have such lists and recommend varieties for home planting where it is not desired to spray such fruit.

Nearly all new fruits mentioned are described in Geneva Bulletin No. 364, "New or Noteworthy Fruits." Institute workers should have this bulletin.

No change in list of varieties of apples recommended last year, unless you add Delicious and King David as kinds that might be tried as commercial varieties.

For northern New York, about Oswego, would recommend Bartlett and Seckel pears as suitable varieties for planting.

FACTS RELATING TO HORTICULTURE

Professor C. S. Wilson

Sulzer Bill.— Fruit growers should know more about the provisions of the Sulzer Law. The important provision is a division of the first grade fruit according to different size. Growers everywhere agree as to the importance of sizing, and while they are not certain that the sizes specified are the best, they feel that the law should be given a fair trial.

Two questions will probably arise in the discussions of this subject. First, how is the work of sizing done; and second, is the increase in the value of fruit sufficient to warrant the extra labor.

It is probable that mechanical graders will make possible the work of sizing. The machines are being tried, and in many cases they have proved successful. While the grader is in the experimental stage, and while it has been unsatisfactory in the hands of some growers, the prevailing opinion is that the mechanical grader is going to be successful. One grower says that "seven men using a machine were able to grade from fifty to sixty barrels per hour." One point in favor of the grader seems to be that efficient grading is made possible by unskilled men of fair intelligence. The experience of the growers is that they get greater net returns for fruit thus graded, the largest size bringing from fifty cents to one dollar more per barrel.

Use of Dynamite in Planting Trees.—A great deal has been said by those interested in promoting its use, but knowledge based on carefully recorded experiences is very limited. Experiments have been started in Missouri and New Jersey and the results observed are for one to two years only. This much seems to be true:

First, peaches make a considerably greater top growth the first season when the holes have been made with dynamite. This additional growth does not seem to be so marked by the end of the second season.

Second, peaches planted with dynamite make a much larger root growth and the roots are more widely distributed and deeper in the soil by the end of the first season.

Third, apple trees in some cases have made a slightly greater top growth during the first season, though these differences do not seem to be observed in all cases. Apple trees have a larger root growth with the roots more widely distributed and deeper in the soil by the end of the first season when dynamite is used in planting.

Whether or not this deep root system would be of benefit to the tree after the soil is settled back to its normal compactness is not known in the case of either the apple or the peach.

So far as experience indicates, the use of dynamite does not reduce the percentage of trees that die in planting a young orchard. The added cost of planting with dynamite amounts to five cents a tree or more.

With careless planting the dangers in the use of dynamite are:

First, leaving large open places in the soil under the tree in such a way that the tree will sink down deep into the soil as it settles.

Second, dynamiting when the subsoil is too wet, thus puddling the soil and possibly leaving water pockets in the case of a compact clay soil.

Until more knowledge is available on this subject our advice to fruit men should be to plant with the shovel in the old fashioned way.

Diversified Farming.— Attention may well be called at this time to the danger of overspecialization in the growing of fruit. There are a few farms in New York State on which fruit may be grown profitably to the practical exclusion of other farm crops. There are many more farms on which fruit should be only one of several crops upon which the farmer depends for his income. The Department of Farm Management has demonstrated as a result of its surveys made of farms in Tompkins and Livingston Counties that those men who are carrying on a diversified system of farming are, as a rule, making the most money. This is so because of a better distribution of labor throughout the year, a lower cost per man and horse hours, and an elimination to a great extent of entire crop failures due to unfavorable climatic conditions such as a man who specializes in the growing of one crop must now and then experience. A diversified system of farming will not produce such large and spectacular profits as may be realized from the growing of one crop in occasional years, but returns are more steady and reliable and the risks involved are considerably less.

FACTS RELATING TO INSECT DEPREDATIONS

Professor P. J. Parrott

New Sulphur Preparations.— There are on the market a number of new spraying mixtures which derive their insecticidal properties from various polysulphides, as sodium, potassium and barium. All of these compounds possess both insecticidal and fungicidal values, but they do not have equally wide ranges of usefulness. To determine their distinct merits and fields of employment further inquiry is desirable. On the basis of efficiency against the San Jose scale, safeness to foliage and cost of material, the lime-sulphur solution best meets the requirements of orchardists.

Spraying for Scale and Distribution of Parasites in New York. — During the past two seasons there has been considerable spotting of apples by the San Jose scale. As a result there are complaints of ineffectiveness of the lime-sulphur mixture. This spray has its limitations, but in spite of its defects it still stands as the most satisfactory spraying mixture for the orchardist for the treatment of this pest. Fruit growers experiencing difficulty in combating the scale satisfactorily should apply the mixture in more liberal amounts and exercise more care in spraying. A common cause for failure is too great a dilution of the stock mixture, which should be diluted according to its density. The proper strength is one gallon of the concentrate testing 32-40° B. to eight or nine gallons of water, while weaker preparations should be diluted with proportionally less amounts of water. Some growers would find it profitable to spray their apple orchards late in the fall as well as in the early spring. During the past season tests with various spraying mixtures, including lime-sulphur and sodium sulphur, showed conclusively that an emulsion 15 per cent. oil is the most satisfactory treatment for summer spraying to control the scale.

It is common knowledge that large numbers of injurious insects are annually destroyed by those which are predaceous upon them or which live parasitically within them. The San Jose scale is not an exception, for it is subject to the attacks of at least eight species of true parasites and a dozen or more predaceous ladybird beetles. Reports of the beneficial work of the enemies of this pest have raised the question of the capacities of the parasites to keep the scale in check and the extent to which an orchardist can safely utilize their services to simplify the problem of spraying. While parasites serve an important function, they have only in rare instances proven sufficiently effective as to render remedial measures unnecessary. They are generally capricious in their behavior, if not more so than the insect on which they subsist. The more efficient parasites of the San Jose scale are present in all of the important fruit-growing sections of New York, but so far there has been no indication that fruit-growers can safely dispense with the usual spraying with lime-sulphur to control this pest.

The Cabbage Aphis.— The cabbage aphis is a serious pest to late cabbage, and during the past season it caused severe losses throughout all sections where this crop is grown on a large scale. There has developed a great need for practical and detailed information as to the most satisfactory means of protecting cabbage from losses by this insect.

In six tests by the Geneva Station the cost of spraying an acre of cabbage, including labor and cost of materials, was as follows: (1) $2.72; (2) $4.10; (3) $3.50; (4) $3.25; (5) $1.95; (6) $4.70. In these tests the amounts of spray applied to an acre were as follows: (1) 100 gals.; (2) 188 gals.; (3) 91 gals.; (4) 96 gals.; (5) 89 gals.; (6) 175 gals.

Two treatments of Black Leaf 40, 3/4 of a pint to 100 gals. of water and 2 lbs. of soap, applied with hand-directed nozzles, afforded efficient protection to cabbage from this insect.

SPRAYING FOR CABBAGE APHIS

Name and Locality	No. Acres	Kind of Outfit.	Total Cost of Spraying per acre.	Cost of Spraying per acre.	No. gals. Spray per acre
T. D. Whitney, Flint, N. Y.	5	Orchard sprayer..	$2 72	$1 00	100 gals.
T. Scoon, Geneva, N. Y.	9	Orchard sprayer..	4 10	2 48	88 gals.
W. N. Black, Flint, N. Y.	1⅕	Knapsack.......	3 50	1 23	91 gals.
W. N. Black, Flint, N. Y.	12½	Orchard sprayer..	3 25	1 25	96 gals.
Alfred Lewis, Geneva, N. Y.	84	Field sprayer ...	1 95	1 12	89 gals.
Experiment Station, Geneva, N. Y......	1	Field sprayer ...	4 70	2 30	175 gals.

Tabulated Data

Plat 1, *Rows* 1 *and* 10-20 sprayed 2 times with "set" nozzles.

Average yield per row	1,219 lbs.
Average yield per acre	4.26 tons

Plat 2, *Rows* 2-5 sprayed 2 times, nozzles hand-directed.

Average yield per row	1,607 lbs.
Average yield per acre	5.62 tons
Average gain per row	388 lbs.
Average gain per acre over Plat 1..............	2,716 lbs.
At $19 per ton, gain per acre....................	$25.80

Plat 3, *Rows* 6-9 sprayed 3 times, nozzles hand-directed.

Average yield per row........................	2,047 lbs.
Average yield per acre	7.16 tons

Average gain per row	828 lbs.
Average gain per acre over Plat 1	5,796 lbs.
At $19 per ton, gain per acre	$55.06

Cost of spraying: Plat 1, $3.90; plat 2, $9.40; plat 3, $14.10.

The Cabbage Maggot.— Carbolic acid emulsion prevents the hatching of the cabbage-maggot eggs, and is also destructive to the younger stages of the maggots. The treatment may cause injury to young seedlings and cannot safely be used for the treatment of plants recently set in the field.

Tar pads have, in the station tests, afforded very efficient protection to early cabbage. Plants protected by tar pads will, during seasons favorable for the insect, grow faster and consequently "head" sooner for the early market.

In an experiment on the Baker farm, Geneva, during 1913, the yields from treated plats were at the rate of 723 heads per 1,000 plants; from untreated plats 193 heads per 1,000 plants set in the field. The net profit per 1,000 plants was $41 over the untreated cabbage. Material and labor for applying tar pads will approximate $1.40 per 1,000 plants.

Cost of Spraying for Apple Plant Lice:

1st Spray. When bud tips were green.

Age of trees.	Treatment	Cost per tree.
35	Black Leaf 40—L. S.—Lead	34 to 36¢
12–35	Black Leaf 40—L. S.—Lead	21¢
5–25	Fish-oil soap 1–5	8¢
12–75	Kerosene Emulsion 1–8	11⅓¢

2d Spray.

35–year–old trees, Black Leaf 40—L. S.—Lead	25 to 28¢
25–year–old trees, Black Leaf 40—L. S.—Lead	35¢
35–year–old trees, Black Leaf 40—L. S.—Lead	36¢

Plant Lice on Apple Trees.— There is a growing tendency for orchardists to spray for the plant lice that attack apple trees. Conclusive data is still lacking as to the conditions under which spraying can be most profitably conducted. As a general recommendation fruit-growers should spray as soon as the insects appear in injurious numbers and before an appreciable amount of the foliage is curled. The most satisfactory preparation from the standpoint of safety to leaf tissues and effectiveness against the insects is tobacco extract, 40 per cent. nicotine, (Black Leaf 40) using ¾ of a pint to one hundred gallons of water to which are added from three to five pounds of dissolved soap. The tobacco extract may be used with lime-sulphur, but if this is done the soap should be omitted from the combination. Kerosene emulsion and fish-oil soap at usual strengths are employed by some growers to control these insects, but these insecticides should not be added to the lime-sulphur solution. The eggs of these insects are resistant to spraying mixtures which may be safely applied to fruit trees.

The Clover-Root Curculio as an Alfalfa Pest.— During the past season this insect (*Sitones hispidutus* Fab.) has been very numerous on alfalfa and has done a great deal of damage in young plantings in Seneca and Ontario counties. It is a familiar species in Europe, but only in recent years has it become an important pest in the United States. Clover seems to be its favorite host, but fears have been expressed that it will prove a great menace to alfalfa. The adult is a small, black, hard-bodied beetle from ⅛ to 1/5 of an inch in length. The insect hibernates in the beetle stage and appears with the first warm days of early spring, when the females soon begin to deposit their eggs. The pest attacks both roots and leaves. Owing to the limited experience with the species there is little to suggest in the way of remedies and preventives.

FACTS RELATING TO INSECT DEPREDATIONS

Professor G. W. Herrick

Fruit Tree Leaf Roller.— This is a comparatively new fruit tree leaf pest. The larvae hatch in the spring and spin webs. They get into the blossoms of the fruit and cut off the blossom stems or web them together, and later when the fruit sets, the young larvae begin gnawing into the side of the fruit. We have carried out a series of experiments with spraying but as a result of same we were not able to control the insect satisfactorily. It was found that miscible oils, 1 gallon to 15 gallons, of water, would prevent a large per cent of the eggs from hatching.

Apple Tree Tent Caterpillar.— Pick off egg masses and destroy them. Where spraying is thoroughly done there is no trouble from the apple tree tent caterpillar. They breed upon the wild cherry tree, and hedges containing that sort of trees should be cut down and destroyed.

Canker Worms.— The canker worm is very abundant in certain counties. They can be controlled by spraying early with arsenate of lead, just before the blossoms open, and one spraying just as the buds are beginning to show green. If particularly abundant, would recommend plowing the orchard in which they occur if possible during the early summer. This will break up the pupae cases in the ground. With this plowing and with the application of the poison spray there is no question but what the canker worm can be controlled.

FACTS RELATING TO INSECT DEPREDATIONS

Dr. E. P. Felt

The experimental work with the codling moth has been continued during the last two seasons by examinations in orchards where the spraying was thorough, and the outcome clearly shows that under normal crop conditions, 95 to 97 per cent. of worm-free apples may be expected from one thorough and timely spraying. It is important to emphasize the great value of the treatment within a week or ten days after the dropping of the blossoms, since this is fully twice as effective as one, two or three weeks later. Efficiency in spraying, rather than the number of applications is the important thing.

San Jose scale parasites have appeared abundantly in a number of widely separated Hudson Valley localities. In some places they have evidently been important factors in reducing the numbers of the scale. In one instance 85 per cent. of the scales were killed and one sample showed 185 holes on a piece of a branch only one inch long and 5/16 of an inch in diameter. It should be remembered that the San Jose scale parasite rarely becomes efficient before the trees have been seriously injured.

A new corn pest, which we have denominated the "lined corn borer," destroyed several fields of corn in Ulster county, working in much the same manner as the familiar stalk borer. Early fall plowing is one of the best preventives.

The serious outbreak of white grubs last year was followed by the discovery of a large, white maggot in Rensselaer county. This maggot destroyed many of the white grubs and is an important natural enemy. The parent is probably one of our robber flies.

Our position regarding miscible oils has not been materially modified. There is danger of injury following their use upon dormant fruit trees.

Tent caterpillars, both forest and apple tree, are likely to be injurious in individual orchards two seasons in succession and destructive in a section for three or four years. The probability of damage another season may be easily approximated by looking for the conspicuous, easily recognized egg belts.

FACTS RELATING TO PLANT DISEASES

Professor Donald Reddick

Baldwin Spot or Bitter Pit.— The bitter pit, or Baldwin Spot, as it is commonly known among our apple growers, has been prevalent again this year. As reported last year, the Australian Government is investigating this disease and the experts have a large fund at their disposal for continuing the investigations. In a letter from Professor McAlpine, who is in direct charge of the work, it is stated that the cause of the trouble has been determined experimentally. It may be stated that the disease is of physiological nature. No practical suggestions as to methods of control appear in the letter, but as the cause of the trouble is determined it is to be hoped that further work will bring about some satisfactory means of prevention.

Apple Scab.— Apple scab did no damage to fruit in 1911 or 1912. However, during the autumn rains of 1912 the scab fungus spread abundantly on apple foliage and this insured an abundance of infected leaves to carry the fungus over the winter. The result is that the scab has been more or less prevalent in all the apple counties. Even in sprayed orchards the amount of scab has been found as high as 20 to 30 per cent. The occurrence of scab in sprayed orchards may be attributed to two things: (1) less careful applications have been made owing to the fact that the disease has not been prevalent for two years. (2) The application of spray ordinarily recommended for three weeks after the calyx spray was omitted by the majority of growers. In former years this application has not proved of particular benefit for controlling scab but this year was exceedingly important owing to the occurrence of prolonged periods of rainy, foggy weather during the last ten days of May.

Bulletin No. 335 from the Cornell Experiment Station has just been published and contains an extensive account of the life habits of the apple scab fungus and of methods of control.

Comparative. Apple Dusting and Spraying Experiments.—With the introduction of lime-sulphur solution as a fungicide instead of bordeaux mixture, the question at once arose as to what ingredients of the solution are the essential fungicides. From the fact that the solution quickly decomposes on sprayed foliage and from tests made, it appears that the essential agent is finely divided sulphur. With this in mind it was thought possible to apply a very finely ground sulphur in the dry state. In some experiments performed, a finely ground sulphur containing 20 per cent. of dry powdered arsenate of lead was blown on the trees in comparison with spraying trees with lime-sulphur solution to which arsenate of lead had been added. The results of the experiments show that insects were better controlled with the dry mixture than with the liquid. The amount of scab was somewhat greater on the dusted block of trees, in one orchard running 30 per cent. scabby apples as compared with 20 per cent. scabby apples on trees which were sprayed with lime-sulphur solution. The results of the experiments are so encouraging that they are to be continued on a more extensive scale another year.

The cost of dusting trees was somewhat greater in these experiments than for spraying them, but the amount of time saved and the possibility of making applications over large areas at critical times more than off-set the increased expense. It is also possible that the quantity of material used may be greatly reduced in future experimentation, thus bringing the cost of the dry mixture to approximately that of the liquid spray.

Cabbage Club Root.— This disease is very well known in practically all parts of the state where cabbage is grown. It appears, however, that many growers are not aware of the fact that the disease occurs on practically all cruciferous plants, including the cruciferous weeds such as the mustards, etc. The organism causing the disease persists in the soil for a long time and cruciferous crops ought not to be grown in rotation. One grower, attempting to get something out of a field where his cabbage crop was destroyed by club root, seeded it to turnips not realizing that they are also subject to the same disease. The results were disastrous.

It is well known that a liberal application of lime (2 to 5 tons per acre) to the soil is very effective in preventing this disease. It should be borne in mind, however, that lime should be applied to the soil at least 18 months before the time to plant the cabbage. An application of lime immediately preceding planting is of very slight value. The lime referred to above is stone or quicklime. If ground limestone is used, proportionally larger quantities must be applied.

End Rot of Tomatoes.— This is distinctly a dry weather disease and has been exceedingly prevalent the past year. It seems quite certain that the disease as it occurs in New York State is not caused by parasitic organisms but is due to an interruption of the normal water supply. There is no known method of preventing the disease but it has been suggested by some that more careful attention to the preparation of soil and more careful cultivation to conserve moisture will aid in preventing the trouble.

Tomato Leaf Blight.— This disease is caused by a fungous parasite and is apparently becoming more troublesome throughout the State. It is known that the fungus winters on fallen leaves and that the leaves nearest the ground are first infested in the spring. In wet seasons the disease may become so destructive by mid-season as to completely cut off the yield.

No practical methods of control have been employed by New York growers other than to change the tomato field from year to year. The occurrence of this disease makes it practically impossible to grow tomatoes twice in succession on the same field.

The disease may be controlled by spraying but our methods of culture make this practically impossible. If the disease continues destructive it will be necessary to use culture methods adaptable to the practice of spraying. In home gardens the use of bordeaux mixture will prove effective.

Potato Rot.— Attention is called to the fact that potato rot has not been reported from any section of the State although the loss sustained by Maine growers has run as high as 40 to 50 per cent. in some instances. The desirability of planting home-grown seed needs to be emphasized this year.

FACTS RELATING TO PLANT DISEASES

Professor F. C. Stewart

The Disinfection of Seed Potatoes.— The disinfection of seed potatoes by means of formaldehyde gas is not to be recommended except in cases in which it is impracticable to use either of the liquid treatments, because: (1) it cannot be depended on to kill all of the scab germs; (2) it does not kill all of the Rhizoctonia; (3) it may injure the tubers; (4) it is too complex. Both its safety and its efficiency depend very largely upon the quantity of potatoes per cubic foot of space in the disinfection chamber, and somewhat, also, upon the moisture content of the air. With less than three pounds per cubic foot severe injury occurs invariably; with ten or more pounds there is no injury; while with intermediate quantities varying degrees of injury are obtained. Only the quantity of ten pounds (167 bu. per 1,000 cu. ft.) is known to be both safe and efficient, though it is probable that quantities of 5 to 10 pounds may be treated without material injury, particularly if the tubers have not begun to sprout. Sprouted tubers are much more liable to injury than unsprouted ones. The injury appears in the form of sunken, dead, brown areas surrounding the lenticels and eyes. The standard corrosive sublimate treatment for scab kills also Rhizoctonia, but the formalin treatment does not kill Rhizoctonia. Therefore, when it is desired to treat potatoes for both Rhizoctonia and scab, the corrosive sublimate treatment should be used.

Persistence of the Potato Blight Fungus.— In New York, the fungus of potato late blight (*Phytophthora infestans*) does not live over winter in the soil, except, possibly, in those rare cases in which the ground does not freeze deeply enough to kill the tubers. Therefore, as far as the late blight and rot are concerned, there is no risk in planting potatoes where blight and rot prevailed the previous year. However, it really does not matter much whether the fungus does or does not persist in the soil. In any case, blight and rot can be controlled by proper spraying and, in New York at least, the necessity of spraying cannot be avoided by any method of crop rotation or by planting disease-free seed.

Lime-Sulphur vs. Bordeaux Mixture for Spraying Potatoes.— Experiments made in three successive seasons show that lime-sulphur is harmful rather than beneficial to potatoes. In 1913 five thorough sprayings with bordeaux increased the yield at the rate of 31.5 bushels per acre, while the same number of sprayings with lime-sulphur decreased the yield by 22.3 bushels per acre. Both the gain for the bordeaux and the loss for lime-sulphur were much smaller than in previous years.

The Quarantine on European Potatoes.— I am informed that considerable pressure is being brought to bear on the Secretary of Agriculture and the Federal Horticultural Board to raise the quarantine on European potatoes. In my judgment it would be unwise to raise the quarantine. That the potato wart disease is a dangerous one there is no doubt. It has not yet appeared in this country and we cannot afford to take any chances on its being introduced.

The Rust on Currants and White Pine Trees.— Further outbreaks of the currant rust (*Cronartium ribicola*) in 1911 and 1912 made it necessary for the State Department of Agriculture to consider placing a quarantine on currants and white pines at Geneva. Until the spring of 1913, the disease had been found at Geneva on currants only. This led us to suspect that, contrary to the accepted view, the fungus may over-winter on currants, thereby making it possible for it to perpetuate itself thereon year after year without the intervention of pines. With the assistance of five other plant pathologists we have tested this point experimentally. The results of the experiments seem to prove that our suspicion was unfounded. The fungus cannot over-winter on currant. Hence, it is unnecessary to quarantine currants for this disease. It is sufficient to quarantine the pines, and that has been done.

Standard Corrosive Sublimate Treatment for Scab in Seed Potatoes.— Two ounces corrosive sublimate to fifteen gallons of water. Soak the seed one and one-half hours.

FACTS RELATING TO PLANT DISEASES

F. M. Blodgett

The Control of Hop Mildew.—There are two things of primary importance: 1. The sanitation or burning of the leaves in the fall. This, of course, is a common practice in hop yards — to burn the vines immediately after picking the hops. However, when the mildew is so bad they do not pick the hops, they leave them standing on the poles; or, in the case of a young yard, it is not customary to cut the vines and burn them the first year. It is important that the vines be cut late in the fall the first year and that they be burned. It is also particularly important to cut and burn the vines in the case of bad mildew infestation, where the infestation is so bad that the crop is not picked.

2. The principal means of controlling the disease besides burning of the leaves and vines, is by the use of sulphur. There are two methods of making sulphur fine enough for use by spraying machines — one by buying it fine and the other by distilling it in a large retort so it condenses from the vapor. There is little difference in results from the use of the two kinds of sulphur.

For the present it seems best to recommend the use of the flowers of sulphur.

It is difficult to give any directions as to time of application. In general, it has been found necessary to first apply sulphur soon after the vines are up the poles, before blossoming time. The second time, when the hops are in full bloom. This second application is probably the most important because it is at this time that the hops themselves are growing the most rapidly and are therefore most likely to be attacked by this disease. In fact, the cluster variety of hops frequently is not attacked at all until this period of the year. It is then usually necessary to make one or two applications between this time and picking time.

At each application about fifty pounds of sulphur should be used per acre. This is applied as a dry powder and we have never been able to see any better results from its application while the leaves were wet; in fact, if one may judge by the appearance of the sulphur on the leaves as applied at these two times, the distribution seems to be better if the sulphur is applied to the dry leaves.

Formerly, the use of lime with the sulphur was advised. This we have found greatly reduces the efficiency of the sulphur.

Advise starting to spray when the disease first appears on the vines.

COW TESTING WORK

Professor H. H. Wing

Cow Testing Association.— A cow testing association is a good thing for a community, a county or a state, but primarily for the individual. I do not believe we are going to get rid of the poor cows unless we bring it home to the individual man in every case.

There is no question but what ultimately the improvement in the breeding of dairy cattle is going to be along pure bred lines. We all know that the important factor in this work has been in the matter of authentic records. The cow testing work brings up certain question as to the authentication of records. The Cornell University Experiment Station was asked to take supervision of the records for Holstein cattle and other breeds have fallen in, and we have been the clearing house for that work, with the exception of the Jersey breed, for the last twenty years.

The question has arisen with respect to the attitude with regard to the authentication of cows for advanced registry records that belong to cow testing associations. I made a statement to the effect that I would certify the records of testers for cow testing associations as long as they were satisfactory. It was assumed, or it has come about, that it was necessary for me to give my assent to the appointment of a man to a cow testing association whose records would be approved for purposes of advanced registry. I would like to make this definitely clear. I will assume no responsibility whatever with respect to the appointment of any man to a cow testing association along this line, but I will accept the records for the associations I authenticate for, for any man who is regularly appointed to a regular cow testing association. In other words, I put the appointment of a competent tester in the hands of the cow testing association alone. I will accept the records of such a tester in the case of any of the pure bred cows of the four breeds, providing he follows my directions, reserving the right to stop at any time, or to send another man. The four breeds I authenticate for are the Holstein, Guernsey, Ayrshire and Jersey.

COW TESTING WORK

A. J. Nicoll

We have twenty-eight cow testing associations with about fourteen thousand cows in this State. I cannot see how any man can go into a community where they have had a cow testing association in operation any length of time and talk with the men and see the actual results over what they have previously done, and not feel that it is a good thing not only for the individual but for the community. Not only are the members of the association interested in the individual cow, but the neighbors and everybody in the community are talking milk per cow and butter fat per cow, and the interest is wholesome outside of the association.

We have organized thirty-two associations and four of these have been discontinued. For every one of these four a good reason for discontinuing can be seen. Reasons are: inefficiency of the tester, and lack of funds with which to pay the man, both of which could have been overcome by a little supervision.

The farmer *can* make the records himself, but we know it is a fact that he will not. The next best thing is for him to hire somebody to do it for him.

It is questionable whether the average farmer can afford to give up his time to do this work when a tester can be employed to do it at a cost to him of $2 per month. Also, many farmers are not qualified to do the work.

FORESTRY WORK

Professor F. B. Moody

In connection with my work in the Forestry Department I have been assigned the extension work, and it is our desire to cooperate with you gentlemen as much as we possibly can. Since you are out over the State in various sections, it seems to me that it would be a very good plan to make some sort of an arrangement by which I could get in touch with you as to the needs in various sections of the State. I realize full well that there are certain sections where lectures or talks of this kind would not be of any great interest on account of highly developed agricultural regions, and on the other hand, there are sections where the forestry question is an important one and where the people in the community are desirous of some information along this line.

Besides this work we are making personal examinations of farm woodlots and small timber tracts for those who desire such help and assistance. This work is done at the expense of the owner, and the lecture work on forestry will be carried on through demonstrations, if it is possible to do that, as well as illustrated lectures or talks. I think the plan of the College is to be reimbursed one-half the traveling expenses.

If we can be of any assistance to you, or if you know of any club or organization that is interested in this matter, we would appreciate it very much if you will be kind enough to advise us.

The State Conservation Commission, Albany, and the State College of Forestry at Syracuse University, are prepared to extend the same service.

FARM BUREAU WORK

L. S. Tenny

I would like to make it very clear that no one, I think, believes that the farm bureaus will revolutionize farming. I believe that they will play their part in the reorganization of our farm lands, but by no means are they going to do everything. The farm bureau trespasses in no way, shape or manner upon any kind of extension work we have existing at the present time. They are different in their character of work; they are different in their organization and management; they will not compete with anything we now have; they supplement and unify in a very marked degree all the other agencies we now have at work.

While I have a great deal of enthusiasm and a great deal of interest in the farm bureau work, I should like to urge you constantly to put on the brake in regard to this work. Let us go slow. I said, when I took over the work of the farm bureaus, that I would very much like to see the ten original counties we had working at that time continue for about a year before any more were organized. We will now have practically twice that many counties organized by the first of the year. Do not worry about the fact that the farm bureau propaganda will not advance fast enough. I think one of the most unfortunate things we could have would be to have 40 or 50 farm bureaus established within the next twelve months.

I am very glad that the organization of these bureaus has meant going down into the pockets of the people. In this connection I would like to say, however, that the more I get into the work and the more I see of it, the more I am convinced that when we have worked out our organization, when we have determined the character of the work we are to do, it should be established very much on the same principle as our public schools are now established. I would like to see this work largely financed as far as the salary of the agent and expenses of the bureau, and supported through taxation, but this taxation I think will originate within the county. No county will receive a farm bureau until an appropriation is made. In my mind, probably automatically with the appropriation from a board of supervisors, there will be State money available, and automatically when State money is available, there will be Federal money available; but the first step will be with the local people themselves. If the time ever comes when the State Department of Agriculture or the Federal Department of Agriculture has money to finance a bureau without local support, in my mind it will be a disastrous day for the farm bureau work.

The word " extension " is not a good term. I have tried to keep it out of the farm bureau work. Why? Because extension means that some force back is extending something. That is not at all correct of the farm bureau work. The locality or territory employing a farm bureau man should be responsible for the work done. I do not know of any other so-called extension work built on just the same line, and there is where we are different, in spirit at least, from most of the other means of getting agricultural education back to the farmer. I hope that the institute workers will emphasize this fact.

Do not exploit the farm bureau too much. Unless the subject is brought up, present the matter in just a few general statements. In counties where we have farm bureaus working, emphasize the fact that the success or failure of these bureaus does not rest with the State Department of Agriculture, that it does not rest anywhere outside of that county.

We cannot select a farm bureau man and put him in a county. We do reserve the right of approval of a man.

The two difficulties we hear most frequently mentioned are: "Where are you going to get the men?" and, "What man would want the job if he has to answer every question in agriculture that will be asked in that town or county?" These are absolutely the two smallest difficulties we have to contend with. We do not have to select 20 or 30 farm bureau men in any one day, and at no time in the development of the farm bureau movement in New York State has the problem of the man been a very serious one. As to the other one, we make it very clear that we do not expect the county agent to answer every agricultural question. If you wanted to devote your whole time to answering petty questions, you could do it. The development of the work depends largely on these men getting the broad view of what needs to be done.

FACTS RELATING TO THE DAIRY

G. A. Smith

Milking Machines.— The success of the results of a milking machine depends on the farmer. The machine will milk cows and will milk them well, if properly handled. Cows milked one year with the machine and the alternate year by hand, showed practically no difference in results.

When a man starts a machine the first thing he has to do is to manipulate the udder and start the milk. If he straps the cups on without manipulation, he will fail. A man must be so familiar with the machine that, if for any reason it stops milking, he can detect this by the sound and be there to manipulate the udder and get the machine started again. At the end, he must be on hand to manipulate the udder and get the last of the milk.

It has been shown that it is possible to make milk with the machine, having fully as low bacterial count as by hand milking.

Would recommend the milking machine in that it will milk cows; that it is a success in the hands of a competent man. It will probably be a success financially. If a man has to hire help for other farm operations who may just as well be used to milk the cows, it will probably not be a help financially to him.

Average time required to milk a cow by hand, weigh and take care of the milk, etc., 7 minutes.

Average time required to milk a cow with machine, weigh and take care of the milk, etc., 4 minutes.

Doubtful if it is profitable to use a machine for less than 15 cows.

The teat cups are rinsed in cold water, then in hot salsoda water, then in hot water and then placed in a 10 per cent. solution of brine. The machine is taken apart and thoroughly washed once a week.

The milking machine will not milk as good as the best hand milker, but it will milk better then the average hand milker that you can hire.

Geneva Experiment Station has published a bulletin on results obtained from the use of the milking machine. This bulletin is available for distribution.

DAIRYING

Dr. R. S. Breed

Cleanliness is next to godliness in dairy matters. Bacteria get into the milk from three sources: In the milk as it comes from the udder; on dust and dirt particles falling into the milk; from the utensils which are not sterilized.

On the average it has been found that milk as drawn from the udder contains 428 bacteria per cc. These bacteria on the whole probably play a very small part in the further changes which take place in the milk.

Work done on milk pails at the Geneva Station showed that the germ content of the milk as it was present in the pail could be reduced to about one-half by the use of the small-mouth milk pail. It was not found that the clipping of the hairs about the flank, udder and adjoining parts of the cow had any marked effect in reducing the germ content. The plastering and otherwise renovating the interior of the stable was likewise found to have no measurable effect in the number of bacteria in the milk. Cleaning with the vacuum cleaner was not found to have a greater effect in reducing the germ content of the milk than cleaning by hand. Protecting the milking pails from dust after they had been sterilized by the use of steam, was found to have a measurable effect.

Steam sterilization of utensils is best, and the best substitute after that is good old-fashioned cleanliness.

It is an exceedingly difficult matter to get the average farmer to take the precautions necessary to keep the germ content down, when making use of the milking machine.

RURAL UPLIFT

Reverend C. S. Tator and Professor A. R. Mann

We must not expect the country church and the country minister to do everything. The church is simply a factor in the community. Advise the coordination of all institutions.

New York State College of Agriculture extension Circular No. 1, "A Plan for a Rural Community and Center" by Prof. Mann, recommended for use of institute workers.

Would advise a community council composed of the school board, ministers, leaders in various other organizations, as master of the grange. The district to be covered by such a community council should be decided by that community; it might be a school district or an incorporated village.

The Wisconsin Experiment Station has a bulletin on the making of community surveys.

The Home as an Institution in This Rural Improvement.— The farmers' institute man and the farm bureau man who can bring into the home the desire for better reading, and can follow that up with the possibility of better books, is doing a good work. The question of rural improvement is to make it possible to have these things in the home, where it is not now possible to have them.

Book on rural improvement by Dr. Warren H. Wilson, "Evolution of the Community" recommended for institute workers.

Promote things of general interest in the community; that the church and school shall have sufficient financial support to do their work; that there shall be good buildings, good equipment and a good teacher in the school.

FACTS BROUGHT OUT IN WOMEN'S CONFERENCE

Mrs. Ida S. Harrington

Dean Stocking spoke, in his opening address, of how vague a term "teacher of agriculture" would be in these days of specialization. To speak of a "teacher of Home Economics" is equally vague. A woman institute lecturer is, however, expected to cover the whole field of Home Economics. This makes her work much more difficult than the specialized work of the men lecturers. Furthermore, the communities who ask for women speakers are very vague about what they want. It may be that they have no special thought beyond a desire for variety, like the man who said: "To bring out a crowd it needs a woman speaker or a spraying machine!" Yet men like this one are the very ones whom we want to convince that the message which Home Economics speakers bring can make their community a better place in which to live. Our *message,* not we ourselves, for while the idea of service must be uppermost in our own minds, we must not convey the idea that we have come to "uplift" a community. Only by gaining the viewpoint of our audience and becoming, for the time being, one of themselves, can we do the work as it should be done.

As individuals our resources would soon be at an end, but with such aids as Cornell behind us, we have nothing to fear. Cornell offers us the chance to promote our primary students of the institute into their more advanced work of the extension schools. It offers us the help of the Reading Course for the Farm Home. Cornell is making an especial study this year of the needs of the *girl* in the farm home, with reference to occupations by which she may earn money.

Interesting rural communities in rural progress depends much on their being in a state of health to be keenly alive to new ideas. Their state of health depends, on the other hand, on the interest they take in the message which Home Economics teaching brings them along the lines of sanitation.

The death rate in the cities is being reduced; in the country it is not. This is due to a lack of understanding, in rural districts, of personal hygiene, that is, of the importance of fresh air and a proper dietary. Ventilation means a moderate temperature and a change of air. Overheated rooms seem stuffy because there is not a normal amount of moisture in such rooms. Letting in outdoor air, with its greater amount of humidity, corrects this defect. It is not enough to leave windows slightly open. Several times a day the house should be thoroughly *flushed* with fresh air. Since we spend one-third of our lives in our sleeping rooms, it is most important that flushing with fresh air should not be neglected in them. The prevalence of influenza in the country is the direct result of lack of air.

Unfavorable conditions come from underheating as well as from overheating. Can we remedy this without undue expense? The initial cost of installing a furnace is no more than the cost of two or three coal stoves, and the cost of running a furnace is less than the cost of two coal stoves. Drums are better for heating upstairs rooms if there is no furnace, than are registers, for registers carry up foul air from the lower rooms.

Much sickness among country women is directly due to cold out-houses. This is another strong argument for putting water into country homes.

Sanitation in the care of food must be emphasized, with special reference to milk. A brush is far more sanitary than a dishcloth for washing milk utensils. The use of *boiling* water, in addition to the usual methods of cleansing, is imperative in the care of the separator.

Protection of the water-supply is an essential in bettering conditions. Flies must be excluded and as far as possible exterminated. Mosquito netting, or even wire screening for windows, does not cost much as compared with the disease which may be prevented by its use. Fly traps may be attached to window screens which face the stable. This device was invented by Professor Hodge of Worcester. A similar device, for use in country stores, consists of what looks like a two-story dolls' house. In the floor of the upper story, two fly traps are adjusted, opening into the lower story where the bait attracts the flies, which then crawl up into the traps. A screened door in the upper part admits of removing the traps for emptying and cleaning.

Much depends on keeping houses dusted in sanitary fashion. Dustless dusters retail at 25 cents each, but may be made at home for a nominal sum by treating cheesecloth with kerosene or with paraffine oil.

The cause of sanitation may be helped by disseminating a knowledge of the real cost of patent medicines, as compared with their selling price.

The help of the schools may be enlisted in furthering sanitation by interesting teachers in the available literature on the subject, and children in contests along these lines.

Teaching on sanitation must not overlook the important factor of proper rest and relaxation.

Getting our money's worth of health depends much on freedom from worry about money matters. To this end we must keep accounts, a thing which to many people seems so difficult, but which may be made so easy. What do we want to show by our accounts? Where we have spent money foolishly, in order that we may avoid similar pitfalls; how prices compare with previous years; what proportion of our income is going for this or that class of expenses. For the busy housewife, the subdivisions in the account book should be as few, and the whole system as simple, as possible. The equipment necessary for the keeping of accounts, are: A file for delivery slips, so that they may be used to check up monthly bills; a letter file for paid bills; a pad, with a pencil attached, in the kitchen; a desk, or a table with a drawer; an account book.

Under the item of food, it would be desirable to make separate record of meat, vegetables, groceries, dairy products. If the farm garden supplies the vegetables, the farmer should sell the product to the house. If the garden is cared for by the wife, her labor must be paid for, since not many women would care to credit the digging of a half bushel of potatoes "to recreation."

Not only is it important to keep track of our money income and outgo, but of our income and outgo of physical strength as well. One of the greatest factors in disease is a poorly planned dietary. The diet may at times be held responsible when the real cause of malnutrition lies in lack of fresh air, or in lack of sufficient water, externally and internally applied. A poor inheritance may be a factor in malnutrition. Poor feeding in childhood results in poor adult health. The intestinal tract is very delicate. The use of whole milk, for instance, in infant feeding before the child's digestive powers are ready for it, may result in abrasion of the digestive tract and a lessened power of digestion; with an especial difficulty in digesting milk, if the original abrasion was due to that.

The right foods for the growing child are those which yield energy (carbohydrates), combined with sufficient tissue-building foods (proteins) and such other building materials as iron, lime, and phosphorus. There must further be a balancing of acid-forming foods, such as meats, cereals, legumes, and eggs, with base-forming foods such as fruits, vegetables and milk. If acid-forming foods predominate there will be an accumulation of waste in tissues and intestines. This condition may again be due to lack of water. Proper stimulants and digestants for the growing child are fruits and vegetables. Such stimulants as coffee and tea should be omitted from the child's dietary. The diet must be governed by individuality, but we must distinguish between a real inability to take certain foods, and mere notionalism. Fat is hard for children to digest. A diet rich in fat has a tendency to produce acidosis. Such a diet needs the antidote of liberal amounts of fruit. Adapt the food to the occupation. Do not give the same diet to the lumberman, the seamstress, and the baby. Do not serve a heavy meal on Sundays if less exercise is taken than on any other day.

To some extent Institute workers may demonstrate a sensible diet. At least we can avoid eating what we condemn, as well as what would make us drowsy listeners and dull speakers.

It is also within our power to demonstrate suitability in our dress. As is true of the diet, dress too must be adapted to the occupation. Providing clothing for the farm family is often rendered difficult because the local store, from lack of encouragement, carries so little variety. But whether buying from the local dealer or a mail-order house, a woman must have a knowledge of textiles, if she is to buy wisely; she must know how they ought to look and what they ought to cost, and use her influence toward bringing about a pure textile law.

The reason for adulteration of textiles is that the consumers' demands must be supplied at such prices as they are willing to pay. If every woolen suit were made entirely of new wool, there would be only one new suit available all around, each year. So old goods are used over and over. This is legitimate if the shoddy is so well woven in that it is thoroughly incorporated, but not beyond that.

A large per cent. of cotton is woven in in various ways. Many $2 and $3 " woolen " shirts are practically all cotton, and are not an economical purchase. Much of our table " linen " is cotton, with a design of linen scrapings worked it. Silks are weighted with metal salts. Mercerized cotton (properly, cotton immersed in sodium hydroxide) is imitated by giving the mercerized effect through heat and pressure.

A laboratory test for wool is to baste pieces of woolen material on squares of cotton material, and immerse in hot weak caustic soda solution. Animal fibers dissolve in this solution. Home tests may be applied by burning. There is no mistaking the odor of burning wool as compared with burning cotton. Wool leaves a black ash, cotton a white one. In burning weighted silk, the residue resembles a Welsbach gas mantle in texture. Another test is to take the warp thread, pull it out and bite it. If it pulls out and the ends are curly and uneven, it is probably wool. Cotton snaps and breaks off even. To test linen, moisten the piece with olive oil or cotton seed oil. The cotton part will be opaque and the linen part translucent.

Having considered the sanitary surroundings of the family, their diet, and their clothes, we are ready to discuss the problem of simplifying and beautifying daily life through home decoration. If our surroundings fit into the purpose of daily life, the result is art. The simplifying process must be both mental and physical. This is the first step in progress. We must eliminate waste of material, waste of energy, waste of method. We must simplify our place of work by convenient arrangement, and by mental planning enable the brain to save the heels.

The heart of the household is the kitchen. It is the core of the problem. We shall gain a sense of uplift by having the right outfit, arrangement, and appearance of surroundings and person. Power of environment is strong. If the kitchen is ship shape and attractive, its influence will radiate like a white light through the rest of the house. We used to begin home decoration at the front of the house. Now we begin at the back, knowing that if that is made right, we shall reach the front in time. However hopeless the task may seem, no situation is impossible.

Have nothing in your homes which common sense cannot justify. Ask these questions: Is this useful? Is it appropriate? Is it durable? Is it beautiful?

Art in the home does not mean bringing more things into the home, but usually taking something out.

Decoration does not mean making things "fancy." It means achieving simplicity, harmony, honesty, permanency.

If this is what we are to stand for in home decoration, what are we to stand for in music? Here too we must fight for that which is permanent. Let us help to censor the American popular song and free the rural homes of the poison of poor music, by being unafraid to plead for the folk song and every song that lifts lives to a higher plane.

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

AUG 21 1915

Circular 92

List of Commission Merchants Bonded and Licensed

Pursuant to the Provisions of Article 12-A of the
Agricultural Law (Chapter 457,
Laws of 1913)

January 5, 1914

STATE OF NEW YORK

Department of Agriculture

Calvin J. Huson, *Commissioner*

Albany, *January* 5, 1914

The following is the list of the persons, firms or corporations who have been licensed to this date by this Department, as Commission Merchants pursuant to the provisions of Chapter 457 of the Laws of 1913. They have all complied with the provisions of the Law and have given a bond in the sum of $3,000 which has been duly approved. A number of applications for licenses are still pending and supplemental lists of persons licensed will be issued from time to time.

If shippers of farm produce will make shipment of their products to the persons named in this list, they are assured of having the protection of the law for the regulation of the business of Commission Merchants, provided they mark such shipments "To Be Sold On Commission."

Before making a shipment of produce, the shipper should ascertain if the Commission Merchant to whom he intends shipping same handles that kind of produce.

It will greatly assist the Commission Merchant in handling produce expeditiously and in finding a good market therefor if the shipper will advise him of the kind, quality and approximate time of arrival of goods shipped or to be shipped.

All complaints should be made promptly to the Department of Agriculture and should contain a full statement of facts upon which same are based.

LICENSED COMMISSION MERCHANTS.

License number.	Name.	Organization.	Address.	Kind of produce handled.
			ALBANY.	
671	James J. Davis	Individual	10 Lyon Block	Fruits and vegetables.
238	Ransom J. De Long	Individual	330 Broadway	General.
320	Leslie J. Doyle	Individual	104 Hudson ave	General.
427	Fitch, Cornell & Co	Corporation	320 Broadway	Butter, cheese and eggs.
582	Fox River Butter Co	Corporation	339 Broadway	Butter, eggs and cheese.
96	J. H. & F. A. Meade, Inc	Corporation	365, 367 Broadway	General.
278	Alex. McKown	Individual	11 and 12 Lyon block	Fruits and vegetables.
670	William J. McMahon	Individual	3 Market square	Fruits and vegetables.
530	Joseph A. Minst	Individual	359–361 Broadway	Poultry, butter, cheese, eggs, lard and oleo.
666	The W. W. Reed Co	Corporation	39 Hudson ave	Butter, eggs, cheese, etc.
302	Rich & Evertsen	Copartnership	8 and 9 Lyon block	Fruits, vegetables, eggs, meat and dairy products.
237	John J. Ryan	Individual	2 and 4 Grand st	Fruits and vegetables.
647	William F. Ryan	Individual	6 and 7 Lyon block and 22 Daniel st	Fruits and farm produce.
234	James Stephens & Son	Copartnership	347, 349 Broadway	Fruits and vegetables.
235	William J. Skillicorn	Individual	386 Broadway	Poultry, butter, eggs and cheese.
236	Henry R. Wright	Individual	326 Broadway	General.
			AMSTERDAM.	
565	Rinella, Battaglia & Co	Copartnership	54 Market st	Fruits and vegetables.
587	Edward B. Roselle	Individual	22–24 West Main st	General.
			ANTWERP.	
601	F. X. Baumert & Co	Copartnership		Butter and cheese.

			BALLSTON SPA.	
394	The Ballston Refrigerating Storage Co.	Corporation	Bath st	General.
			BARKER.	
654	Almer J. Todkill	Individual		Fruit and produce.
			BATAVIA.	
600	Caito Brothers	Copartnership	Ellicott st	Fruits and farm produce.
			BATH.	
570	Dean & Co.	Corporation	1 Liberty st	Hay, straw, grain and vegetables.
			BINGHAMTON.	
289	Fred L. Norton & West Corporation	Corporation	309 Chenango st	General.
148	Empire Produce Co	Corporation	142 State st	All kinds of farm produce.
			BROOKLYN, N. Y.	
575	M. & E. Appel Co., Inc	Corporation	171 Fort Green place	Eggs, poultry, beef, lamb and calves.
246	Armann & Colling	Copartnership	1014 Wallabout market	Eggs, vegetables and fruits.
94	Ashman & Burkhardt	Copartnership	117 Wallabout market	All kinds of farm produce.
93	William H. Beebe	Individual	221 Flushing ave., Wallabout market.	Poultry, eggs, butter, game, etc.
193	Berrian Bros	Copartnership	30 Washington ave., 147 West ave., Wallabout market	General.
247	Berrian & Joerger	Copartnership	122 West ave., Wallabout market	General.
459	Boehm & Co	Copartnership	185, 187 Fort Green place	Poultry and meats.
92	Daniel P. Boehm	Individual	204 Wallabout market	Poultry, eggs and calves.
496	Emma Bohnson	Individual	84 Kent ave	Hay and straw.
480	August Henry Borchers	Individual	1032, 1033 Wallabout market	Fruits and produce.
194	Ignatz Braun	Individual	137 West ave., Wallabout market	General.
349	John Braun & Sons	Copartnership	148 West ave., Wallabout market	General.
545	Brooklyn Hay & Grain Co	Corporation	86–88 Kent ave	Hay, straw and grain.
125	Jacob Brooks	Individual	119 West ave., Wallabout market	Fruits and vegetables.
479	Bruna & Scheele	Copartnership	23, 24 Wallabout market	Fruits and vegetables.

Licensed Commission Merchants — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			Brooklyn — *Continued.*	
648	Seymour Clark & Son	Copartnership	Foot of Clymer st., D. L. & W. R. R.	Fruits and vegetables, hay.
9	Ben Cohen	Individual	117 West ave. cor. A. st., Wallabout market	Fruits and vegetables.
10	Conron Bros. Co	Corporation	189, 191 Fort Green place	Poultry and meats (car lots only).
598	Danziger Brothers	Copartnership	Wallabout market, 144 West ave	Fruits and vegetables.
499	Dworetzky & Shlefstein	Copartnership	97, 99 Varet st	Eggs, butter, cheese and poultry.
127	Fehring Bros	Copartnership	146 West ave., Wallabout market	Fruits and produce.
126	Ernest August Fitter	Individual	21 and 138 Wallabout market	Butter and eggs.
411	C. Fitter & Sons	Copartnership	11 Wallabout market	Butter and eggs.
532	John H. Gerdts & Sons	Copartnership	27 Washington ave., Wallabout market	Fruits, vegetables and eggs.
129	R. Gleichmann & Co	Copartnership	113, 115 West ave., Wallabout market	General.
132	L. W. Goetschius & Co	Copartnership	1015 and 1129 Wallabout market	General.
230	George W. Graf	Individual	201 Wallabout market	Calves, eggs and pigs.
673	Growney & Wehmhoefer	Copartnership	10 Wallabout market	General farm produce.
659	Halpern & Kaufman	Copartnership	1021 Washington ave	Butter and eggs.
588	Herman Heins & Co	Copartnership	463 Liberty ave	Fruits and vegetables.
574	Casper Herold's Sons	Copartnership	26, 142–143 Wallabout market	Fruits and vegetables.
34	George Kastner & Co	Copartnership	31 Wallabout market	Butter, cheese, eggs, lard and apples.
621	Keller & Freeman	Copartnership	205 Market ave., Wallabout market	Poultry, calves and eggs.
672	Keveny Brothers	Copartnership	121 West ave., Wallabout market and 17 Washington ave	All kinds of farm products.
213	D. Lippmann & Sons	Copartnership	1030, 1031 Wallabout market	General.
214	S. S. Long & Bro	Copartnership	177–179 Washington ave	Butter and eggs.
609	Pietro Martori	Individual	9 Washington ave	Vegetables.

610	David Mayer	Individual	152 Fort Green place	Meats and poultry.
658	William Menzer	Individual	124 Boerum st	Butter and eggs.
97	A. W. Merrill & Co	Copartnership	1017 Wallabout market	Butter, cheese and eggs.
220	Louis Meklenburg	Individual	1016 Wallabout market	Fruits and vegetables.
281	R. E. Meyer & Co	Copartnership	101, 103 Wallabout market	Fruits and vegetables.
338	Frank Montesani	Individual	1022 Washington ave., Wallabout market	General.
401	Alexander McDicken Co., Inc.	Corporation	18 Wallabout market	Fruits and vegetables.
513	Miller & Bertholf	Copartnership	North 10th st. and Kent ave	Hay, straw, grain and general.
89	Hyman Morris	Individual	1023 Wallabout market	Fruit, produce and eggs.
541	N. Y. & N. J. Produce Co., Inc.	Corporation	Wallabout market	Fruits and vegetables
294	F. Petchesky & Sons	Copartnership	238, 240 Market ave	General.
566	Estate of William Protzmann	Copartnership	229–231 Flushing ave	Eggs and meat products.
626	Louis Richter	Individual	5 and 109 Wallabout market	Fruits and vegetables.
51	James Rollo	Individual	1019 and 1133, 1134 Wallabout market	Fruits and produce.
158	Joseph Sabel	Individual	234 Market ave., Wallabout market	Fruits and vegetables.
514	Chas. Schaefer & Son	Copartnership	304 Meserole st	Hay, straw and grain.
83	Harry J. Schroeder	Individual	114 West ave., Wallabout market	Fruits and vegetables.
305	Schlick Bros	Copartnership	104, 106 West ave., Wallabout market	General.
311	L. J. Schukal & Co	Copartnership	15, 16 Washington ave., Wallabout market	Fruits, vegetables and eggs.
40	Service Stores Co	Corporation	39th st. and 2d ave., 169 Fort Green place	Butter, eggs, poultry, tea, coffee, spices and provisions.
633	Simensky Brothers	Copartnership	131–133 West ave., Wallabout market	General.
682	Herman Springer	Individual	14 Wallabout market	All kinds of farm produce.
332	Thomas H. Townsend	Individual	126, 128 West ave., Wallabout market.	Fruits, vegetables and eggs.
661	Frederick H. Vahlsing	Individual	1029 Washington ave., Wallabout market	Vegetables.
226	Sanford A. Vroman	Individual	86, 88 Kent ave	Hay and straw.
226	Sanford A. Vroman	Individual	Bushwick station	Hay and straw.
636	S. & W. Waldbaum	Copartnership	54–56 Sumner ave. and 911 DeKalb ave	Butter, cheese, eggs and live poultry.
326	Ignatz Weissberger	Individual	1025 Washington ave., Wallabout market	General.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			BUFFALO.	
259	Bert H. Bean	Individual	74, 76 West Market st	General.
260	Charles Bierma	Individual	135 Michigan st	General.
314	Daniel Boosing	Individual	156 Michigan st	General.
377	F. Brennisen & Son	Individual	156, 158 Michigan st	General.
590	Buffalo Fruit & Produce Co	Corporation	76 West Market st	Fruits and produce.
674	Buffalo Vegetable Marketing Co	Corporation	49–51 East Market st	Fruits and produce.
128	William W. Burrell	Individual	180 Perry st	General.
144	Melvin Carpenter	Individual	103 Michigan st. and 44 West Market st	General.
686	Frank P. Coward & Son	Copartnership	82–86 West Market st	Fruit, butter, eggs and farm produce.
567	Dickman & Levea	Copartnership	161 Michigan st	Vegetables and poultry.
142	John Dohn	Individual	46 West Market st	General.
517	C. S. Dudley	Individual	174 Perry st. and 129, 131 Michigan st	Fruits and vegetables.
143	Louis Engel	Individual	48 West Market st	Fruits and vegetables.
145	Fairmont Creamery Co	Corporation	106 West Market st	General.
140	J. H. Gail	Individual	94 West Market st	Cheese, fruits, vegetables, butter, eggs and poultry.
131	Gleason & Lansing	Copartnership	150 Michigan st	All produce except vegetables and fruit.
130	Frank L. Graham	Individual	56 West Market st	General.
371	Harlow Brothers	Copartnership	141, 143 Michigan st	General.
265	Albert Hendel	Individual	155 Michigan st	General.
266	Charles H. Hickman	Individual	100 West Market st	General.
643	Horn & Zimmer	Copartnership	58–60 West Market st	Fruits, vegetables, eggs, cheese, butter and poultry.
267	George Hornung Son's Co	Corporation	54 West Market st	General
264	Frank X. Huber	Individual	40 West Market st	General.
688	Kendrick & Johnson	Copartners	64–66 West Market st	General farm produce.

269	Kurtz Brothers	Copartnership	90 West Market st	General.
272	Layman & Sheldon	Corporation	56 West Market st	General.
276	Frank G. Leon & Co	Copartnership	172 Michigan st	General.
372	T. & J. Leon Co	Corporation	82, 84, 86 West Market st	General.
657	George B. Long & Co	Individual	149 Michigan st	General farm produce.
285	M. and S. Produce Co	Copartnership	171 Scott st	General.
288	National Fruit and Produce Co	Copartnership	173 Perry st	Fruits, vegetables and farm produce.
256	Potter & Williams Co., Inc	Corporation	144, 146 Michigan st	Fruits and produce.
299	Rea & Witzig	Copartnership	104 West Market st	General.
668	Jacob Reiner	Individual	454 Oak st	Hay.
296	B. D. Rogers' Sons	Copartnership	102 West Market st	Fruits, vegetables and poultry.
297	Rothenberg Bros	Copartnership	176, 178 Perry st	General.
261	Satuloff Bros	Copartnership	145 Michigan st	Fruits, vegetables, butter, eggs and poultry.
306	Emil Adam Sauer	Individual	624 Washington st	General.
309	John E. Schintzius	Individual	38 West Market st	Fruits and vegetables.
308	Snyder & Co	Copartnership	62 West Market st. and 125 Michigan st	General.
307	Fred F. Stone	Individual	180 Perry st	Butter, eggs, cheese and poultry.
310	Frederick J. Schafer, Jr	Individual	96 West Market st	Fruits, vegetables and poultry.
470	George H. Schreck	Individual	178, 180 Perry st	General.
335	William C. Townsend	Individual	80 West Market st	General.
334	F. J. Trautman's Sons	Copartnership	52 West Market st	General.
436	W. M. Truesdale	Individual	135 Michigan st	General.
333	Walter A. Tuttle	Individual	169 Scott st	Wholesale poultry, butter, eggs and local farm products.
331	George A. Underwood	Individual	180 Perry st	General.
404	Fred Unger	Individual	175–177 Perry st	General.
329	Vishion & Co	Individual	68 West Market st	General.
313	Frank E. Wattles	Individual	148 Michigan st	Butter, eggs, cheese, poultry, maple sugar and syrup, honey and beans.
325	Jay H. Wattles	Individual	98 West Market st	General.
321	Jay B. Wattles	Individual	171 Perry st	Butter, eggs, cheese and poultry.
551	G. M. Wattles & Son	Copartnership	152 Michigan st	Butter, eggs, cheese and poultry.
157	Wax & Sugarman	Copartnership	159 Michigan st	General.
324	Francis M. Welch	Individual	139 Michigan st	Fruits, vegetables and poultry.
322	George R. Whitney	Individual	42 West Market st	General.
323	William C. Will	Individual	163 Scott st	General.
286	Zaubitzer & Miller	Individual	46 West Market st	General.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			CARTHAGE.	
149	George A. Dealing	Individual	28 Church st	General.
			CEDAR HILL, ALBANY COUNTY.	
239	B. S. Winne	Individual		General.
			COHOES.	
504	Charles Rogers & Son	Copartnership	65 Canvass st	All farm produce.
			CORNING.	
148	Empire Produce Co	Corporation	134 West Market st	Fruits, vegetables, dairy products, general.
675	J. B. Maltby, Inc	Corporation	41–47 West Market st	Butter, cheese, eggs and all kinds of fruit and vegetables.
			ELMIRA.	
148	Empire Produce Co	Corporation	316, 318 Carroll st	General.
241	F. A. Keeton	Individual	123 Baldwin st	Fruits and vegetables.
468	Meade & Post Co., Inc	Corporation	160 Lake st	General.
105	W. H. Ferguson & Son	Copartnership	231–235 West Water st	General.
			ESPERANCE, SCHOHARIE COUNTY.	
330	Sidney B. Vunck	Individual		General.
			GLOVERSVILLE.	
602	Battaglia & Sarraino	Copartnership	93 West Fulton st	Fruits and vegetables.
			HORNELL.	
148	Empire Produce Co	Corporation	57 Canisteo st	Fruits, vegetables, dairy products, general.

HUDSON.

146	Chas. C. Finger	Individual	744 Warren st	Fruits and vegetables, eggs and butter.
328	C. A. Van Deusen Co	Corporation	13–23 North 7th st	General.

ITHACA.

268	Jester W. Hook	Individual	113, 115 South Tioga st	General.

JAMESTOWN.

569	Treat & Ogilvie	Copartnership	208–210 Pine st	Fruits and vegetables.

KINGSTON.

318	Everett & Treadwell Co	Corporation	536 Broadway and 132 No. Front st	Butter, eggs and maple syrup.

LINLITHGO, COLUMBIA CO.

538	Washburn & Co	Individual		Hay and straw.

NEWARK, WAYNE COUNTY.

681	C. Rupert & Sons	Corporation		Hay, straw. produce, fruits and grain.

NEW YORK.

108	Bernard Abel Co., Inc	Corporation	305 Washington st	General.
462	Carl Ahlers	Individual	5 Worth st	Butter, cheese and eggs.
257	Albert & Gerber	Copartnership	190½ Duane st	Butter and eggs.
384	John M. Allen	Individual	317 Washington st	Farm produce.
373	Wm. L. Allen & Co	Copartnership	81 North Moore st	Dried fruits.
577	George Allison & Co	Corporation	177 Reade st	General.
573	L. Amendola & Co	Copartnership	294 Washington st	Farm produce.
559	American Cranberry Exchange	Corporation	105 Hudson st., 188 Chambers st. and 286 Washington st	Cranberries.
168	E. S. Alpaugh & Co	Corporation	18 Bloomfield st	Poultry, meats, eggs, butter.
106	John Angleman	Individual	206 Duane st	Fruit and vegetables.
1	W. D. Appleget & Co	Corporation	50–58 Thompson ave	Poultry, calves, pork, lamb and eggs.
469	Archdeacon & Co	Copartnership	100 Murray st	General.
562	Arguimbau & Ramee	Copartnership	379 Washington st	Grapes, onions, oranges and lemons.
580	Armstrong & Swift	Copartnership	321 Greenwich st	Butter, cheese and eggs.
539	Harry Atlas	Individual	314½ Greenwich st	Eggs, butter, live poultry.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
	NEW YORK — *Continued.*			
135	J. H. Bahrenburg Bro. & Co.	Copartnership	103 Murray st	General.
258	William Baldwin & Sons	Copartnership	132d st and Lincoln ave	Fruits and vegetables.
104	Balfour Brothers	Copartnership	850, 852 Washington st	Butter, eggs, cheese and poultry.
103	Simeon M. Barber	Individual	403 East 103d st	Butter, eggs, cheese.
394	The Ballston Refrigerating Storage Co	Corporation	90 West Broadway	Eggs, dairy products, fruits and general.
100	F. C. Barger & Co	Copartnership	158 Franklin st	Butter and eggs.
102	J. A. Bassett	Individual	133d st. and Willis ave	Apples, potatoes, cabbage, turnips, veal and eggs.
594	Henry Z. Baum	Individual	New York R. R. Terminals (10 Enos place, Jersey City)	Hay, straw and grain.
601	F. X. Baumert & Co	Copartnership	177 Franklin st	Butter and cheese.
664	Edward Beatty	Individual	404 Produce Exchange	Grain.
426	Henry Behrman & Sons	Copartnership	257, 259 Washington st	General.
428	Belvedere Bros	Copartnership	400 East 105th st.; 2026 First ave	General.
76	A. Bennett & Co., Inc	Corporation	103 Park pl	Fruits and vegetables.
351	S. Benowitz & Co	Copartnership	211 Duane st	General, butter, eggs and poultry.
171	Albert Berg	Individual	500 East 153d st	General.
350	Berkowitz & Schwartz	Copartnership	121 Warren st.; 173, 175 Attorney st.	General.
190	J. A. Bernholz & Sons	Individual	30 Harrison st	Eggs, poultry, butter and cheese.
99	Irvan L. Berrian	Individual	300 Washington st	General.
642	P. D. Berrian & Co	Individual	188 Reade st	Fruits and farm produce.
383	S. Betman & Son	Copartnership	188 Duane st	General.
98	James A. Betts	Individual	292 Washington st	Fruits and vegetables.
374	Beyer Bros. Commission Co	Corporation	19 Harrison st	Butter, eggs, cheese, poultry.
124	Clennen Bishop	Individual	65, 67 Loew ave.; 25, 26, 27 13th ave.	General.

2	W. S. Bishop & Co	Individual	333 Washington st	General.
370	John M. Blackburn	Individual	122 Warren st.; 276 Washington st	General.
153	Geo. A. Blank	Individual	156 West st	General.
466	The S. Blick Co	Corporation	346 Greenwich st	Butter, eggs, poultry.
110	Max Blum	Individual	142 Reade st	Milk, cream, butter, cheese, eggs.
382	Bodine & Hinrichs	Corporation	2931 Thompson ave.; W. Washington market	General.
3	Daniel P. Boehm Co	Corporation	345–347 Washington st	Poultry, eggs and calves.
451	S. F. Bogart & Son	Copartnership	114 Warren st	General.
415	Bourne & Farrand	Copartnership	159 Chambers st	Butter, cheese, eggs.
207	E. R. Brackett Co	Corporation	215 West st	General.
109	Henry Brantigan	Individual	104 Park pl	General.
527	Breakstone Bros	Copartnership	344 Greenwich st. and 532 Westchester ave	Butter and eggs.
248	Henry Brinker & Co	Copartnership	199 West st	Fruits and vegetables.
348	C. M. Britten Co	Copartnership	40 Harrison st	Butter, eggs, poultry.
162	E. F. Britten & Co	Individual	27 Harrison st	Dairy products, eggs and poultry.
312	Brooklyn Poultry Co	Corporation	16, 17, 18 13th ave., W. Washington market	Live poultry.
603	The Bronx Produce Co	Corporation	Section No. 11, Bronx Produce House	Farm produce.
4	Rudolph Brossman	Individual	24 Harrison st	Butter.
29	R. L. Brower & Co	Individual	92 Barclay st	Fruits, vegetables, eggs, and poultry.
5	George G. Brown	Individual	57 Lawton ave.; 34, 42 Bloomfield st.	Poultry, eggs, dressed calves and hogs.
630	The S. S. Brown Co	Corporation	105 First st. and 207 East 123d st	Butter, cheese and eggs.
465	W. P. Brown & Son	Copartnership	139 Reade st	Butter and eggs.
555	Bunker & Petersen	Copartnership	252 Washington st	Farm produce.
107	H. Burlew Co	Individual	119 Warren st	Vegetables, fruits, eggs, poultry.
170	Chas. H. Burmeister & Co	Copartnership	134 Reade st	Butter, eggs, poultry.
552	Junius C. Bush	Individual	39 Courtlandt st	Hay and straw.
440	James Butler, Inc	Corporation	390 Washington st	General.
112	H. T. Cadenas Co	Corporation	27 William st	Fruits and vegetables.
605	M. Calderone	Individual	2012 First ave	Fruits and berries.
111	Wm. A. Camp & Co	Individual	361 Washington st	General.
486	Geo. B. Campbell	Individual	248 Washington st	General.
395	James Carneval & Co	Individual	254 Washington st	Fruits and vegetables.
439	Teresina Carobine	Individual	1983–1985 First ave	General.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
178	T. Carobine & Co	Copartnership	120 Warren st	Fruits and general.
159	Isaac W. Carr & Co	Copartnership	204 Franklin st	Fruits and vegetables, dairy products, grain and hay.
6	J. Pratt Carroll, Inc	Corporation	267, 269 Washington st	Fruits and vegetables.
550	Carscallen & Cassidy	Corporation	N. Y. Produce Exchange	Hay, straw, grain and farm products.
529	L. Casazza & Co	Copartnership	254 Washington st	Produce.
639	A. Cavagnaro	Copartnership	224–226 Washington st	Farm products.
429	The Clark & Brown Hay Co	Corporation	970 Cauldwell ave	Hay and straw.
638	R. E. Cochran Co., Inc	Corporation	132 Park pl	Farm products.
8	Robert T. Cochran & Co	Copartnership	290 Washington st	General.
635	Samuel Cohen	Individual	Bronx Produce Exchange	Potatoes, apples, onions, turnips and cabbage.
526	Samuel Cohen	Individual	12 Ludlow st	Fruits and produce.
347	Wm. H. Cohen & Co	Individual	229 Washington st	Poultry, meats, eggs, nuts.
114	Charles W. Colburn	Individual	59 Little West 12th st	Eggs, butter, poultry, fruit, vegetables.
413	Chas. Collins Co	Copartnership	197 West st	Live poultry.
345	John Corell & Co	Copartnership	334 Washington st	Poultry, meats.
355	Frank Couch & Co	Copartnership	346 Washington st	General.
11	The Arthur Courtin Co	Corporation	85 Front st	Citrus fruits.
113	Covert Bros	Copartnership	299 Washington st	General.
359	Covert & Cottrell	Copartnership	2001 First ave	General.
172	Coyne & O'Leary	Copartnership	108 Murray st	General.
115	John C. Crate	Individual	216 Duane st	General.
525	Jas. W. Crawford	Individual	15 Harrison st	Butter and eggs.
481	Cregan & Meany	Copartnership	197 Reade st	Fruits and farm produce.
263	S. Crossley & Sons	Corporation	204 Franklin st	Fruits.

346	Cunningham Bros	Copartnership	104 Barclay st	Meats and poultry.
262	R. C. Curtis	Individual	189 Reade st	General.
676	Curran, Marsh & Co	Copartnership	170–180 Chambers st	All kinds of farm produce.
599	Cushing & Brandt	Copartnership	424–425 Produce Exchange	Grain.
197	Geo. E. Cutter	Individual	22 Harrison st	Eggs and butter.
597	E. H. Dare & Co	Copartnership	2 Broadway	Hay, grain and feed.
231	W. J. & S. H. Davenport	Copartnership	94 Park pl	Fruits and vegetables.
665	Andrew Davey	Individual	350–354 Greenwich st	General.
458	W. M. Davidson & Co	Individual	106 Murray st	General.
12	W. O. & H. W. Davis	Corporation	100 Barclay st	Fruits and vegetables.
516	Dean & Brownell	Copartnership	Section 8, Bronx Produce House and Melrose market, 158th st. and Morris ave	Farm produce and live stock.
570	Dean & Co	Corporation	601 West 26th st	Hay, straw, grain and vegetables.
125	Delucia & Co	Copartnership	17 State st	Lemons and oranges.
13	Dennis & Herring	Corporation	49–55 Thompson ave., West Washington market	General, including dressed calves and dressed hogs, live and dressed poultry.
14	S. De Noyelles & Co	Copartnership	34, 36 Hewitt ave., West Washington market	Poultry, eggs, butter, calves and lambs.
523	Descalzi Bros. Co	Copartnership	238 Washington st	Fruits and general.
116	Deutsch & Tauber Bros	Copartnership	326 Greenwich st	Butter, eggs, poultry.
623	De Winter & Stewart, Inc	Corporation	Corner Washington and Jay sts	Dressed poultry.
354	W. C. Deyo & Bro	Copartnership	859, 861 Washington st	General.
434	E. A. Dillenbeck	Individual	601 West 33d st	Hay, straw, grain.
249	C. I. & M. Dingfelder	Copartnership	253 Washington st	General.
134	R. W. Dixon & Son	Copartnership	266 Washington st	Fruits, vegetables, poultry, eggs, hogs, calves and nuts.
117	R. Dixon & Co	Corporation	202, 204 Franklin st	Fruits, vegetables and nuts.
423	William Doolittle & Son	Copartnership	22 Harrison st	Butter, cheese, eggs, poultry.
154	Joseph A. Doran	Individual	132d st. and Lincoln ave., Bronx Produce House	Fruits and vegetables.
15	John Doscher & Co	Copartnership	133 Reade st	Butter and cheese.
425	W. S. Douglas & Co	Individual	191 Duane st	Butter, cheese, eggs, etc.
169	Droste & Snyder	Copartnership	177, 179 Duane st	Butter and eggs.

Licensed Commission Merchants — *Continued.*

License Number.	Name.	Organization.	Address.	Kind of produce handled.
			New York—*Continued.*	
528	Dulany & Tull	Copartnership	41–45 Hewitt ave., West Washington market	Poultry and game.
208	W. J. Duncan & Co	Individual	251 Washington st	Fruits and general produce.
173	N. Durham & Sons	Copartnership	313 Washington st	Dressed poultry.
449	Edwin B. Dusenbery	Individual	601 West 33d st	Hay, straw and grain.
497	Dusenberry & Co	Copartnership	90 West st	Hay, straw, grain and farm products.
118	Lewis Ebert & Sons, Inc	Corporation	151 Reade st	General, poultry and dairy products.
412	Egbert & Case	Corporation	11 Jay st	Butter and eggs.
16	John F. Ehlers	Individual	866 Washington st	Fruit and vegetables.
518	Wm. Ellis	Individual	51 Little West 12th st	Fruits and vegetables.
119	William W. Elzea	Individual	327, 329 Washington st	Poultry, butter and eggs.
17	Enyard & Godley, Inc	Corporation	171 Duane st	Butter, cheese and eggs.
120	J. N. Everitt Co	Corporation	326 Washington st	Dressed and live poultry, all kinds dressed stock, fruit and eggs.
18	Oliver A. Farley	Individual	9–15 Hewitt ave	Calves, poultry, sheep and lambs.
19	W. J. Farrell Co	Corporation	325 Washington st	Poultry, eggs, game and butter.
624	John H. Fay	Individual	324 Washington st	Farm produce.
596	Albert C. Field, Inc	Corporation	C–21 Produce Exchange and 9 Stone st	Grain and feed.
500	Frank F. Finch	Individual	199 Chambers st	Hay, straw, grain.
137	Geo. F. Fish	Individual	183 Reade st., 410 West 14th st	Celery, lettuce and general.
387	S. Fish & Co	Copartnership	260 Washington st	Fruit and vegetables.
482	Alex. F. Fisher	Individual	601 West 33d st	Hay, straw, grain, potatoes, apples, onions and cabbage.
427	Fitch, Cornell & Co	Corporation	16, 18 Jay st	Butter, cheese and eggs.
121	Fleck & Hillman, Inc	Corporation	49 Loew ave., New West Washington market	Live poultry.

232	Emil Fleischl & Son	Copartnership	514 Westchester ave	Dairy products, poultry and general.
553	Fleming & Peters, Inc	Corporation	834 Washington st	Fruits and farm produce.
515	Morris Fliegel	Individual	342 Greenwich st	Butter, eggs and poultry.
416	Florida Brokerage Co	Copartnership	97–101 Warren st	Farm produce.
641	Florida Produce Co	Copartnership	38 Ludlow st	Apples, pears, peaches and cucumbers.
685	Fox River Butter Co	Corporation	78 Hudson st	Butter, eggs and cheese.
653	L. W. Forbell & Co	Copartnership	342 Produce Exchange	Grain.
463	Jno. H. Francke & Co	Copartnership	90 Park pl.; 239 Washington st	General.
95	Sol. Frankel, Inc	Corporation	50–56 Loew ave., W. Washington market	Live poultry.
540	Franklin Feed Stores	Corporation	83 North Moore st.; 365 Washington st	Hay, straw and grain.
20	Oscar Frommel & Bro	Corporation	639 West 34th st	Fruits and vegetables.
464	S. H. & E. H. Frost	Corporation	319 Washington st	General and fruits.
21	Frost & McNab	Copartnership	42 Harrison st	Fruits, poultry, vegetables and eggs.
430	N. A. Fuller & Co	Copartnership	110 West 34th st	Hay and straw.
542	G. Furman & Co	Corporation	Corner West and Gansevoort sts. and West Washington market	General.
85	Furman & Page, Inc	Corporation	112 Warren st	Fruits and vegetables.
139	Bernard Gallup	Individual	601 West 33d st	Hay, straw, grain and general.
22	William Gamble & Co	Corporation	292 Washington st	Fruits, vegetables and dressed poultry.
620	Abraham Gams	Individual	190 Duane st	Butter and eggs.
380	P. Gargiulo & Brother	Individual	282 Washington st	General, fruits and vegetables.
576	Garlick & Danziger	Copartnership	447 Water st. and 7–12 13th ave	Live and dressed poultry.
454	Charles C. Garrett	Individual	12 Harrison st	Butter, eggs and cheese.
572	The Harry G. Gere Co	Corporation	C–5 Produce Exchange	Hay, straw and grain.
627	John Gilliam & Co	Corporation	105 Hudson st	Fruits, nuts, honey and beans.
91	David P. Godfrey	Individual	118 Warren st	Fruits and vegetables.
628	Salvatore Greco	Individual	2052 First ave	Fruits and farm produce.
188	Greenspan & Brenner	Copartnership	192 Duane st	Butter and eggs.
396	Thomas D. Griffin & Co	Individual	189 Chambers st	General.
77	Henry H. Grimm & Co	Copartnership	93 Park pl	Fruits and vegetables.
476	Gude Brothers, Kieffer Co	Corporation	21 Jay st	Butter, eggs and cheese.
23	Frank Gulick	Individual	Corner Hewitt and Lawton aves., West Washington market	Dressed poultry.
250	Hait & McNicholas	Copartnership	843 Washington st	Fruits and vegetables.

Licensed Commission Merchants — *Continued.*

License Number.	Name.	Organization.	Address.	Kind of produce handled.
			New York—*Continued.*	
179	Michael C. Hall	Individual	98 Park pl	Apples, potatoes, onions and pears.
251	The J. Hamburger Co	Copartnership	264 Washington st	Fruits and vegetables.
210	G. P. Hammond Co	Individual	40 Little West 12th st	General.
25	Hance Brothers Co	Corporation	32 Bloomfield st., 50–60 Lawton ave., West Washington market	Poultry, game, nuts, furs and skins.
252	Warren D. Hanford	Individual	105 Hudson st	Butter and eggs.
26	Horace B. Hanson	Individual	180 Reade st	Vegetables.
571	Harlem Valley Fruit & Produce Association, Inc	Corporation	Bronx Produce House	General.
557	Perry Hatch	Individual	601 West 33d st	Hay, straw and grain.
501	L. V. Haukamp	Individual	182 Reade st	General.
546	Joseph Havranek	Individual	319 East 73d st	Onions and potatoes.
72	G. Z. Hawk & Son Co	Corporation	34–40 Loew ave., West Washington market	General.
650	Louis Hellman	Individual	132d st. and Lincoln ave., Bronx Produce House	Potatoes, onions, cabbages and turnips.
663	Fred L. Herbert	Individual	N. Y. Produce Exchange, 2 Broadway	Grain and feed.
211	C. M. Herring & Co	Corporation	23, 25, 27 Thompson ave	Calves, beef, hogs and eggs.
212	Heuser & Vreeland	Copartnership	207 Duane st	Fruit, vegetables, eggs, calves and poultry.
652	Fay D. Hewitt	Individual	189 8th ave. and R. R. terminals	Hay and straw.
444	Hildreth & Segelken	Corporation	265, 267 Greenwich st.; 82–86 Murray st	Honey, beeswax, maple sugar and syrup.
253	George F. Hinrichs & Co., Inc	Corporation	41 Lawton ave., West Washington market	Vegetables, meats, poultry, eggs and dairy products.
606	L. Hirshberg & Co	Copartnership	337 Washington st	Fruits and vegetables.

27	Hoehn & Mayer	Copartnership	295 Washington st.; 450 West 14th st.	Dressed poultry and eggs.
420	Honig & Klein	Copartnership	22 Harrison st.; 71 Northern ave	Butter and eggs.
493	A. Honigsberg & Co	Copartnership	300 Greenwich st	Butter, eggs and poultry.
681	G. W. Hornbeck	Individual	52 Thompson ave., West Washington market	Butter, eggs, live and dressed poultry, veal, pork and lamb.
447	Henry S. Hotaling	Individual	601 West 33d st	Hay, straw and grain.
417	Charles B. Hovey	Individual	33–37 Thompson ave., West Washington market	General.
461	E. C. Howell Co	Individual	250 Washington st	Celery and lettuce.
450	Henry L. Hunter	Individual	132d st. and Lincoln ave	General.
368	Hunter, Walton & Co	Copartnership	164, 166 Chambers st	Butter, cheese and eggs.
561	John C. Huser & Brother	Copartnership	190 Duane st	Butter, eggs and cheese.
489	W. A. Hutcheson & Co	Individual	78 Wall st	General, fruits and vegetables.
28	J. W. Hutchinson & Co	Individual	315 Washington st	Fruits and vegetables.
165	Imperato Brothers	Copartnership	2019 First ave	Fruits and general.
491	Jacobs Bros	Copartnership	39–43 Loew ave.; 65, 67 Hewitt ave	Live poultry.
30	W. T. James & Co	Individual	118 Warren st	General.
195	Janicke Co., Inc	Corporation	320 Washington st	General.
254	Jelliffe, Wright & Co	Individual	284 Washington st	General.
410	H. B. Jenkins & Co	Copartnership	601 West 33d st	Hay and straw.
31	Jewell Brothers	Copartnership	26, 28 Bloomfield st.; 25–31 Loew ave.	Poultry, eggs, meat and general.
255	Martin Johnson & Son	Individual	280 Washington st	Fruits, meats, eggs, dairy products, nuts and honey.
438	T. W. Johnson & Co	Copartnership	325 Washington st	General.
358	Johnstone & Coughlan	Copartnership	172 Duane st	Butter, cheese and eggs.
229	Hugo Josephy & Son	Copartnership	178, 180 Chambers st., and West Washington market	Poultry, game and eggs.
32	George W. Judd	Individual	278 Washington st	Fruits and general.
33	Louis Kadans	Individual	306 Greenwich st	Butter, eggs, cream, cheese and poultry.
502	A. A. Kennard & Co	Corporation	3, 5 Harrison st	Butter, eggs, cheese and creamery products.
680	Kelley & Megna Co	Copartnership	122 Warren st	Fruits and vegetables.
611	Keusch & Schwartz Co., Inc	Corporation	C-1-2-3 Produce Exchange	Grain and feed.
35	J. H. Killough & Co	Copartnership	157, 158 West st.; 146–150 Park pl	Fruits and vegetables.
315	C. H. & C. W. Kimball	Copartnership	202 Franklin st	Fruits and vegetables.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
478	Wolf Kimmelman	Individual	187 Duane st	Butter, eggs and poultry.
357	Joseph B. Kirk	Individual	871, 873 Washington st.; 189 Chambers st	General.
607	Benjamin Kissen	Individual	316 Greenwich st	Butter, eggs and poultry.
270	Jacob M. Klein	Individual	311 Washington st	Poultry, eggs, game and calves.
591	Edgar Kleinhans	Individual	601 West 26th st	Fruits and vegetables.
166	Arthur E. Kline	Individual	306 Washington st	Fruits and vegetables.
177	Knapp Bros. & Co	Individual	106 Murray st	Fruits and farm produce.
660	Knight & McDougal	Copartnership	219 Produce Exchange	Wheat, corn, oats, barley and rye.
73	Koenig and Company	Copartnership	56–64 Loew ave., W. Washington Market	Live poultry only.
36	Kossar and Co., Inc	Corporation	37 Loew ave., W. Washington Market	Live poultry.
687	Martin Kramer	Individual	146 Reade st	Butter and eggs.
74	Joe. H. Krenrich Commission Co.	Corporation	8 Harrison st	Butter, eggs, cheese, poultry and general.
533	Nathan Kronman & Co	Corporation	185 Reade st.; 193 Chambers st	Fruits.
432	Krone Brothers	Copartnership	89 Murray st	General.
136	Kunz, Marsh & Pendleton, Inc	Corporation	170 Reade st	Fruits and vegetables.
644	Kurtin & Kurtin	Copartnership	305 Greenwich st	Butter, eggs and poultry.
353	Lambly & Alpaugh	Copartnership	18 Harrison st	Butter and eggs.
37	Vincent R. Lamia	Individual	202 Franklin st	Fruits, produce and eggs.
608	Patrick Lamia	Individual	99 Warren st	Fruits and farm produce.
679	L. H. Lang & Co	Corporation	524–526 Westchester ave	Calves and poultry.
38	J. K. Lasher & Bro	Copartnership	11 Harrison st	Dairy products, nuts, honey, poultry and eggs.
271	A. Lauro & Bro	Copartnership	836 Washington st	Fruits, vegetables, eggs and poultry.
156	P. Lawless' Sons	Corporation	53, 55 Little West 12th st	Fruits, vegetables, dairy products and general.

361	Leigh and Everitt	Copartnership	316 Washington st	General.
275	August J. Lemkau	Individual	312 Washington st	Lettuce, celery and farm produce.
39	George H. Lewis & Sons	Copartnership	43–49 Grace ave., W. Washington market	General.
40	Linders & Co	Copartnership	288 Washington st	Fruits, vegetables, poultry, nuts, meats and eggs.
375	J. & G. Lippmann	Corporation	338 Washington st	General, except grain and cotton.
41	Jacob Lippmann	Individual	268 Washington st	Fruits and vegetables, farm produce.
560	Gustave Lippmann & Co	Individual	161 West st	Fruits and vegetables.
403	Wm. H. Liscomb & Co	Copartnership	240 Washington st	Fruits and vegetables.
474	Geo. Loblein & Co	Individual	172 Reade st	General.
595	T. F. Loblein & Co	Copartnership	258½ Washington st	Farm produce.
274	Clifford C. Lockwood	Individual	198 Duane st.; 305 Washington st	General.
503	Long Dock Mills	Corporation	N. Y. City docks and terminals; 68 Pavonia ave., Jersey City, N. J	Grain and its products, hay and straw.
388	James Long, Inc	Corporation	118 Warren st	General, fruits and vegetables.
214	S. S. Long & Bro	Copartnership	102–106 Warren st	Butter and eggs.
228	E. P. Loomis & Co	Copartnership	95 Barclay st	General.
622	Salvatore Lorelli	Individual	72 Gansevoort st	Fruits and produce.
273	Isaac Lowenthal	Individual	187 Reade st	Fruits and farm products.
42	Frederick F. Lowenfels	Individual	348 Greenwich st	Dairy products and eggs.
155	W. B. Lunn's Sons	Copartnership	304 Greenwich st	Butter and eggs.
215	Robert G. Lyle	Individual	116 Warren st	Fruits and vegetables.
431	Lynch & Branch	Copartnership	108 Murray st	General.
233	The Lyon Brothers Co	Corporation	330 Washington st	Fruits and vegetables.
352	Edward Lyons & Sons	Copartnership	394 11th ave., Manhattan market	General.
437	McAllen & Nuttall	Copartnership	601 West 33d st	Hay and straw.
592	P. McArdle & Sons	Copartnership	Bronx Produce House	General.
402	Hugh McCarren, Jr	Individual	163 West st	General.
44	Peter McClees	Individual	300 Washington st	Fruits and vegetables.
279	McCormick, Hubbs & Co	Corporation	279 Washington st	West Indian and Florida fruits and produce.
487	Julius D. Mahr, Inc	Corporation	8 Harrison st	Butter, eggs and cheese.
287	George S. Males	Individual	306 Greenwich st	Eggs, butter and live poultry.
629	L. Mandelker & Sons	Copartnership	86 Columbia st	Butter and eggs.
547	Philip Mandelker	Individual	39 Harrison st	Butter, eggs and poultry.

Licensed Commission Merchants — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			New York — *Continued.*	
424	Mangan-Betz Co	Copartnership	132d st. and Lincoln ave.; 9, 10 Bronx Produce House	Carload potatoes, onions, turnips, cabbages.
180	Manniello Bros. & Mayrsohn	Copartnership	191 Reade st	General.
216	Paul Maniscalco	Individual	204 Franklin st	General.
217	Andrew C. Martin	Individual	282 Washington st	General.
45	Maxfield Fruit Co., Ltd	Corporation	202, 204 Franklin st	Citrus fruits.
198	J. B. Maxfield & Co	Individual	75, 77 Park pl	General.
218	James Maye	Individual	304 Washington st; 204 Duane st	Fruits and vegetables.
610	David Mayer	Individual	529 West st., 42–48 Grace ave., West Washington market and 12th ave. and 131st st	Meats and poultry.
386	Maynard & Child	Copartnership	202 Franklin st	Apples and pears.
366	F. S. Maynard & Son	Individual	218 Washington st	General.
356	Chas. P. Mecabe & Son	Copartnership	17 Jay street	Butter, cheese and eggs.
219	Aron Mehler	Individual	317 Greenwich st	Dairy products, poultry and eggs.
656	Samuel Meierfeld	Individual	26 Harrison st	Eggs and butter.
283	J. W. Meloney Co	Copartnership	36 Harrison st	General.
685	Alexander Mersel	Individual	358 Greenwich st	Butter and eggs.
400	A. E. Meyer & Co	Corporation	134, 136 Park pl	General.
90	H. G. Miles & Co	Copartnership	315 Washington st	Vegetables and fruits.
393	L. B. Miller & Son	Copartnership	145 Reade st	Butter, cheese and eggs.
513	Miller & Bertholf	Copartnership	33d st. and 11th ave.; 530 Grove st., Jersey City, N. J	Hay, straw, grain and general.
581	Monfort & Houck	Individual	95 Murray	Farm produce.
669	A. H. Moses & Sons	Copartnership	256 Washington st	Farm produce.
175	Mottus Bros	Copartnership	200 East 116th st	Live poultry.

419	W. H. Mowerson & Son	Copartnership	38–48 Lawton ave, West Washington market	Country produce.
295	Michael J. Mulligan	Individual	835½ Washington st	Vegetables and fruits.
564	M. H. Murphy	Individual	106 Murray st	Farm produce.
543	John E. Murray	Individual	136 Liberty st	Hay, straw and grain.
490	Samuel Nagle	Individual	Cor. West st. and Loew ave. and West Washington market	Dressed meats, poultry and provisions.
379	J. Narzisenfeld	Individual	24 Harrison st	Butter, eggs and cheese.
472	Natale & Frank	Copartnership	250 Washington st	Fruits and produce.
544	Nathan Brothers	Copartnership	74 Hudson st	Butter, eggs and poultry.
282	J. Neugeboren & Sons	Copartnership	13 Staple st	Dairy products, poultry and eggs.
339	N. Y. Commission Co., Inc	Corporation	340 Washington st	Fruits and vegetables.
541	N. Y. & N. J. Produce Co., Inc.	Corporation	26th st and 11th ave., and Bronx Produce House	Fruits and vegetables.
612	N. Y. Independent Meat Co	Corporation	131st st. and 12th ave	Meats and poultry.
460	Nichols Bros	Individual	136 Reade st	Butter, eggs, cheese and beans.
187	John Nix & Co	Corporation	281 Washington st	General.
645	Nolan & Shute Co	Individual	225 Washington st	Fruits.
467	James N. Norris Son & Co	Corporation	58 Bloomfield st	Live poultry, eggs.
488	North American Fruit Exchange	Corporation	90 West st	Fruits and vegetables.
290	George Oliver & Co	Individual	32–36 Lawton ave., W. Washington market; 28–32 Hewitt ave	General.
445	Olivit Bros	Copartnership	335 Washington st	General and fruits.
88	Joseph Oppenheim	Individual	312 Greenwich st	Butter, eggs and poultry.
150	B. W. Otis & Co	Copartnership	139 Reade st.; 10 Hewitt ave	Meats and dried beans and peas.
477	William J. Overocker, Inc	Corporation	601 West 33d st	Hay, straw and grain.
292	Paglinghi Bros	Copartnership	323 Washington st	General.
291	Enos C. Palmer	Individual	106 Murray st	General.
409	Charles Pape & Co	Individual	164, 165 West st	General.
46	Henry Pape & Co	Individual	100 Park pl	Fruits, vegetables and nuts.
47	A. Paul, Jr. & Co	Copartnership	50–62 Grace ave., W. Washington market	General, poultry, lambs and pork.
408	T. F. Park Co	Corporation	54 Harrison st	General.
316	Park & Allison	Copartnership	344 Washington st	General.
399	Parker, Phillips Co	Corporation	202 Franklin st	General.
293	R. H. Peck & Co	Copartnership	26 Harrison st	Dairy products, poultry and eggs.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
398	I. H. Perrine	Individual	56–60 Hewitt ave., W. Washington market	General.
48	John W. Pfeiffer	Individual	108 Warren st.; 272 Washington st	General.
206	Phenix Cheese Co	Corporation	345, 347 Greenwich st	Dairy products and eggs.
49	Phillips & Sons, Inc	Corporation	277 Washington st	Fruits, vegetables, butter, poultry, calves and eggs.
524	Pinney & Geddes	Copartnership	201 West st	Butter, cheese and eggs.
584	John Pirung & Co	Corporation	324 Washington st	Fruits and vegetables.
191	Pitt, Barnum & Co	Copartnership	77 Hudson st	Dairy products and eggs.
662	Poggi & Co	Copartnership	285 Washington st	Fruits.
86	H. T. Pond Co., Inc	Corporation	341, 343 Washington st	Dressed poultry, eggs, butter and calves.
84	R. S. Porter & Co	Copartnership	137 Reade st	Dried beans and peas.
637	The Porto Rico Fruit Exchange, Inc	Corporation	202–204 Franklin st	Porto Rico fruits.
448	W. D. Power & Co	Copartnership	601 West 33d st	Hay, grain, vegetables, fruit.
340	S. T. Pratt	Copartnership	20 Harrison st	Butter, cheese and eggs.
614	Pratz, Kime & Pratz	Copartnership	136 Liberty st	Hay, straw, grain, fruits and vegetables.
649	Pressner Brothers	Copartnership	30 Jay st	Fruits, eggs and poultry.
646	Puccio & Colandrea	Copartnership	2011 First ave	Farm produce.
365	John C. Quick Co	Copartnership	34 Jay st	Dressed poultry, butter and eggs.
298	Rae & Hatfield, Inc	Corporation	317 Washington st	General.
678	Charles C. Ramey	Individual	431 Produce Exchange	Hay, straw grain and feed.
181	Read & Alexander	Copartnership	332 Washington st	Poultry, game, eggs and calves.
615	Isaac H. Reed & Co	Copartnership	225–C Produce Exchange	Flour, grain and feed.
677	Benjamin J. Reeves	Individual	236 Washington st	Apples, pears, cranberries, oranges, grapefruit and pineapples.

534	Reimer Bros	Copartnership	89, 91 Warren st	Butter, cheese and eggs.
618	George N. Reinhardt & Co	Individual	973 Brook ave	Forage.
301	John G. Rettig	Individual	286 Washington st	Fruits and vegetables.
70	J. Smith Richardson & Co	Copartnership	39–47 Thompson ave., W. Washington market	General.
619	Howard S. Rickerson	Individual	96 Warren st	Hay, straw and grain.
556	Judkins J. Riddick & Co	Copartnership	348 Washington st	Fruits and vegetables.
50	Geo. M. Rittenhouse & Co	Copartnership	154 Reade st	Butter and eggs.
300	G. H. Rivenburg & Co	Copartnership	168 Reade st	General.
579	Joseph Y. Roberts	Individual	601 West 33d st	Hay and straw.
161	J. H. Roberts Co	Individual	270 Washington st	Fruits and vegetables.
78	Thos. J. Roberts & Co	Copartnership	181 Reade st	Fruits, vegetables, farm produce and eggs.
151	John A. Rosenbaum & Co	Copartnership	318 Washington st	Butter, eggs and cheese.
303	S. Rosenfeld Co	Corporation	197 Duane st	Butter and eggs.
563	M. Roth & Co	Copartnership	185 Duane st	Butter, eggs and poultry.
505	Samuel Rottenberg	Individual	183 Duane st	Butter, eggs and poultry.
304	B. W. Rowe & Co	Individual	305 Washington st	General.
222	Rubenstein & London	Copartnership	314 Greenwich st	Butter, eggs, live poultry.
512	P. Ruhlman & Co	Copartnership	261 Washington st.; 93 Murray st	General.
681	C. Rupert & Sons	Corporation	1 Broadway	Hay, straw, produce, fruits and grain.
223	David G. Ryer's Sons	Individual	117 Warren st	Fruits, vegetables and poultry.
625	Saal Brothers	Copartnership	156 Reade st	Butter, eggs and cheese.
344	G. Sacca Co., Inc	Corporation	202, 204 Franklin st	Lemons and oranges only.
483	Alfred A. Saisselin	Individual	114 Warren st	Onions, celery, potatoes, apples and lettuce.
182	Saitta & Jones	Copartnership	202, 204 Franklin st	Vegetables, fruits and nuts.
341	Sandler Bros	Copartnership	287 Washington st	Fruits and produce.
52	Joseph P. Sauer	Individual	293 Washington st	Fruits and vegetables.
53	W. O. Saxton & Co	Individual	174 Duane st	Butter, eggs and cheese.
192	Scarborough, Adams & Co	Copartnership	13 Harrison st	Butter, eggs, nuts, poultry.
613	Nathan Schweitzer	Copartnership	291 Washington st	Poultry.
337	Pietro Sciortino	Individual	202, 204 Franklin st	Lemons and oranges.
446	Louis Scheurer & Son Co	Corporation	156 Reade st	Eggs, poultry and butter.
202	J. H. Schneider & Co	Corporation	286 Washington st	General.
363	John Scholl & Bro	Copartnership	147 Reade st	Butter and eggs.
54	Louis J. Schwab	Individual	51–63 Grace ave., W. Washington market	Live poultry.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
189	H. E. Schwitters & Sons	Copartnership	867 Washington st	Fruits, vegetables.
433	Lloyd I. Seaman & Co	Copartnership	148 Reade st	Butter, eggs and cheese.
336	Seckel & Kiernan	Copartnership	361 Greenwich st	Eggs, butter and cheese.
683	Seward-Weledniger Co	Individual	43 Little West 12th st	Fruits and and vegetables.
183	Egbert Seymour	Individual	176 Chambers st	Eggs, butter and cheese.
55	Sgobel and Day	Corporation	204 Franklin st	Fruits and vegetables.
689	R. B. Shimer & Co	Corporation	336 Washington st	Eggs and butter.
319	Adolph Shorr	Individual	153 Reade st	Butter and eggs.
473	J. C. Shute Co	Corporation	231 Washington st	Fruits and vegetables.
203	Omar Sickles	Individual	337 Washington st	General.
536	Simons, Shuttleworth & French Co	Corporation	204 Franklin st	Fruits.
484	J. B. Simmons & Co	Corporation	132d st. and Lincoln ave	General.
422	Lewis S. Simons	Individual	260 Washington st	Fruits and vegetables.
160	Chas. M. Sladkus & Bro	Copartnership	194 Duane st	Butter, eggs, poultry.
56	Smith & Holden	Individual	307, 309 Washington st	Fruits, nuts, vegetables..
152	Smith & Wilson	Copartnership	114 Warren st	General.
204	C. V. Smith & Co	Copartnership	340 Washington st	Fruits and farm produce.
57	Lewis Oliver Snackenberg	Individual	98 Murray st	General.
58	Andrew Spada & Co	Copartnership	204 Franklin st	Potatoes, cabbage, grapes, fruits, vegetables.
632	Spolter Brothers	Copartnership	134 Columbia st	Eggs.
227	Steers & Menke	Corporation	20–24 Lawton ave.; 27, 29 Grace ave., West Washington market	Poultry, eggs, butter, lambs and hogs.
82	F. D. Stefano & Co	Copartnership	190 Reade st	General.
554	Steinhardt & Kelly	Copartnership	101 Park pl	Fruits and farm produce.
548	Joseph Stern	Individual	175 Chambers st	Butter and eggs.

342	M. H. Stevens & Co	Copartnership	8 Manhattan market, ft. W. 34th st	Potatoes, apples, onions, turnips, cabbages.
343	Stevens & Simpson & Co	Individual	262 Washington st	General.
385	W. M. Stewart & Co	Copartnership	345 Washington st	Poultry and game.
631	W. H. Story & Co	Copartnership	Produce Exchange	Grain.
164	Stout & Drost	Copartnership	140 Park pl	Fruits and vegetables.
519	H. E. Stout Co	Corporation	315 Washington st	Dressed poultry and eggs.
87	J. D. Stout & Co	Corporation	19 Jay st	Butter, cheese & eggs.
506	Joseph Sultan	Individual	140 Reade st	Butter and eggs.
589	Swift & Co	Corporation	32 Tenth ave	Meats, poultry, eggs, dairy products, nuts and honey.
443	Tancer Bros	Copartnership	158 Reade st	General, butter, eggs and poultry.
81	Frank M. Tappen	Individual	117 Warren st	General.
389	Thompson, Conklin & Co	Copartnership	100 Hudson st	Beans, dried fruits and canned goods.
59	Thurston Fruit Co	Corporation	204 Franklin st	Fruits.
367	Titus Bros	Individual	154 West st	Fruits and farm produce.
475	S. A. Toadvine & Co	Individual	95 Murray st	Fruits and vegetables.
549	James Tozzi	Individual	192 Reade st	Fruits and farm produce.
442	George Trachtenberg	Individual	360 Greenwich st	Butter and eggs.
455	Trelease & Underhill	Copartnership	330 Greenwich st	Butter and eggs.
60	Antonio Troiano	Individual	295 Washington st	Fruits and vegetables.
507	Giovanni Troiano	Individual	189 West st	Fruits and farm products.
362	George W. Tull & Co	Individual	95 Park pl	Farm produce.
163	Alfred Turner	Individual	500 East 153d st	General.
200	Adam Ulrich	Individual	20 Gansevoort st	Butter and eggs.
421	Eugene Utter	Individual	120 Warren st	Farm produce.
61	Valentine Produce Co	Corporation	262 Washington st	General and fruits.
62	Oscar A. Van Derlyn	Individual	293 Washington st	General and fruits.
378	Van Dyk & Lindsay, Inc	Corporation	236 Washington st	Fruits and vegetables.
604	The Van Orden Hay Co	Copartnership	Produce Exchange	Hay, straw and grain.
327	Abram C. Van Sicklen	Individual	21, 22 Harlem market	Fruits and vegetables.
457	George E. Van Vorst, Inc	Corporation	601 West 33d st	Hay, straw, grain, etc.
63	H. C. Vogel & Co	Copartnership	342 Washington st	General.
167	J. F. Volckman & Co	Copartnership	248 Washington st	General.
495	John N. Voorhees	Individual	179 Reade st	Fruits, vegetables, poultry and eggs.
199	Edward M. Vosburgh	Individual	146 Reade st	Eggs and butter.
184	George A. Vroom & Co	Corporation	128 Eighth ave	General.

Licensed Commission Merchants — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			New York—*Concluded.*	
226	Sanford A. Vroman	Individual	33d st and 11th ave	Hay and straw.
508	Johel M. Wachmann	Individual	40 Harrison st	Butter, eggs and cheese.
435	George F. Wagner Co	Corporation	189 Duane st	Butter, eggs, cheese, etc.
636	S. & W. Waldbaum	Copartnership	175 Chambers st	Butter, cheese, eggs and live poultry.
64	Thomas P. Wallace, Inc	Corporation	116 Warren st	Fruits and vegetables.
369	Hezekiah Warne & Sons	Copartnership	124 Warren st	General.
452	George A. Warner	Individual	502 East 153d st	General.
538	Washburn & Co	Individual	650 West 34th st	Hay & straw.
75	T. A. Watson & Co	Individual	99 Park pl	Fruits and produce.
185	Charles Weber, Jr	Individual	95 Park pl	Fruits and produce.
453	M. Weinschel	Individual	34 Harrison st	Butter, eggs and poultry.
65	Charles Werner	Individual	33 Loew ave., New West Washington market	Live poultry.
209	Morris Weinfeld	Individual	362 Greenwich st	Eggs, butter and poultry.
66	Samuel Werner, Inc	Corporation	59-63 Loew ave., West Washington market	Live poultry and eggs
71	Wessels & Co	Copartnership	246 Washington st	Fruits and vegetables.
405	C. Westerberg & Co	Copartnership	42-48 Loew ave., West Washington market	Live poultry, principally.
186	G. J. Westervelt & Co	Individual	117 Warren st	General.
317	H. C. Wetterau & Co., Inc	Corporation	286 Greenwich st	General.
67	Walter H. Wheeler	Individual	Cor. Grace and Lawton aves., West Washington market	All kinds meat products.
406	William Whispell	Individual	23 Harlem market, 103d st., near First ave	General.
68	John F. White	Individual	854 Washington st	Vegetables and fruits.

69	A. S. Whitesell	Individual	57, 58 Little West 12th st	Vegetables and fruits.
397	N. Wiesenfeld	Individual	342 Greenwich st	Butter and eggs.
407	J. Wilk & Co	Individual	312 Greenwich st	Poultry, butter and eggs.
174	Wilken Bros	Copartnership	419 East 102d st	Butter, eggs and cheese.
390	John W. Williams	Individual	34–42 Thompson ave	General.
617	Frank Williams	Individual	601 West 33d st	Hay and straw.
634	T. Williams & Co	Copartnership	241 Washington st	Fruits, vegetables, butter, eggs and poultry.
381	T. S. Williamson & Bro	Copartnership	7–11 Lawton ave., West Washington market	General.
558	Leonard A. Withington	Individual	601 West 26th st	Fruits and vegetables.
655	Hyman Wittner	Individual	348 Greenwich st	Butter, cheese, eggs, live and dressed poultry.
509	M. B. Wolowitz	Individual	409–413 Water st	Live poultry.
133	Roscoe Conklin Wood & Co	Copartnership	25–29 Lawton ave., West Washington market	Eggs, pork, live and dressed poultry, calves and lambs.
80	Eben B. Woodward	Individual	302 Greenwich st	General.
201	Woolley & Hughes	Copartnership	40–46, 47, 48, 50 Hewitt ave., West Washington market	Dressed poultry, pigs, calves and eggs.
79	Wright & Winsor	Copartnership	12 Harrison st	Eggs, butter, farm produce.
418	Wygant Fruit Co	Individual	276 Washington st	Farm produce.
616	R. A. Yellowbee & Co	Corporation	2 and 4 Stone st	Grain and feed.
593	I. D. Young & Co	Copartnership	23–24 Bronx Produce House	General.
225	A. F. Young & Co	Corporation	308 Washington st	General.
196	W. I. Young & Co	Copartnership	149 Reade st	Butter, eggs and cheese.
205	Zenith Butter and Egg Co	Corporation	355–359 Greenwich st	Butter, eggs and cheese.
224	George J. Ziegler & Co	Copartnership	209 Franklin st	General.
43	Zimmer & Dunkak	Copartnership	173, 175 Duane st	Butter and eggs.
510	Charles H. Zinn, Inc	Corporation	331 Greenwich st	Butter, eggs and cheese.

OGDENSBURG.

280	Mooney & Stewart	Copartnership	8, 10 Lake st	Fruits and vegetables.

PELHAM, WESTCHESTER COUNTY.

684	C. Rupert & Sons	Corporation		Hay, straw, produce, fruits and grain.

LICENSED COMMISSION MERCHANTS — *Continued.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			PORT CHESTER.	
635	Samuel Cohen	Individual	16 Alto ave	Potatoes, apples, onions, turnips and cabbages.
			ROCHESTER.	
376	Allen Fruit Co	Copartnership	2 Ormond st	Fruit, vegetables and poultry.
535	Brown & Otis	Copartnership	12 Ormond st	Fruits and vegetables.
568	Eastern Fruit & Produce Exchange, Inc	Corporation	528 Granite Bldg	New York State fruit and vegetables.
441	Ernisse-Kennedy Fruit and Vegetable Co	Corporation	54, 56 Public market	Fruit and vegetables.
244	George H. Roblin	Individual	195 Peck st	Fruit and produce.
242	Whipple & Walzer Co	Copartnership	41 Pennsylvania ave	Fruits and vegetables.
			SARANAC LAKE.	
531	Louis Kernochan	Individual	Mills ave. and N. Y. C. R. R.	Vegetables, fruits and eggs.
			SARATOGA.	
394	The Ballston Refrigerating Storage Co	Corporation	Caroline st	Eggs, dairy products, fruits and general.
			SCHENECTADY.	
394	The Ballston Refrigerating Storage Co	Corporation	140 Edison Ave	Eggs, dairy products, fruits and general.
586	F. E. Ludington & Co	Individual	315 South Center st	Fruits, vegetables and dairy products.
			SCHODACK LANDING.	
485	Ransem Gardenier & Sons	Copartnership	Schodack Landing	Hay, straw, potatoes, apples, pears.

SYRACUSE.

141	Oliver L. Burton	Individual	508 Pearl st	General.
138	D. D. Gregory, Jr., & Bro	Copartnership	560 South Clinton st	General.
498	T. E. Lauback & Son	Copartnership	105 Walton st	General.
245	McCullough & Wirkes	Copartnership	512 Pearl st	General.
667	James Meager	Individual	215 Walton st	Fruit and vegetables
521	Newcomb & Church Fruit Co., Inc	Corporation	348–352 West Fayette st	General.
522	Roscoe Fruit Co	Individual	417 North Clinton St	General.
243	Horace Richard Tucker	Individual	524, 526 Pearl st	Fruits, vegetables, eggs, butter and cheese.
494	Simon H. Weaver	Individual	516, 518 South Clinton st	Fruits and vegetables.

TOMPKINSVILLE.

106	John Angleman	Individual	Minthorn and Bay sts	Fruit and vegetables.

TROY.

578	Armour & Co	Corporation	2612–2616 Sixth ave	Eggs, meats and dairy products.
101	Battaglia Bros	Copartnership	31 Hill st	Fruit and vegetables.
585	Birney & Nicholson	Copartnership	218–220 Fourth st. and 23 Hill st	Fruits and vegetables.
651	The Lawlor & Cavanaugh Co	Corporation	Adams, River and First sts	Butter, eggs, cheese and poultry
284	Morey & Lee	Copartnership	321, 323 River st	Butter, cheese and eggs.
391	Nugent & Powell	Copartnership	214 Fourth st	Fruits and produce.

UTICA.

122	Anthony & Jones Co	Corporation	129 Whitesboro st	Fruits and vegetables, butter and eggs.
414	Brown & Griffith	Copartnership	47 John st	Butter, cheese, eggs and hay, etc.
392	Griffith M. Jones & Co	Corporation	121, 123 Whitesboro st	Vegetables, dairy products and general.
511	Charles E. Linkie	Individual	76–80 Hotel st	Fruits, vegetables and farm produce.
277	Owen & Griffiths Co	Corporation	125, 127 Whitesboro st	Fruits and vegetables.
520	Lester J. Start	Individual	138, 140 Whitesboro st	Fruits, vegetables, butter, cheese and eggs.

WAVERLY.

537	The Geo. H. Moore Co	Corporation	368 Broad st	General.
289	Fred L. Norton & West Corporation	Corporation	Broad st	General.

LICENSED COMMISSION MERCHANTS — *Concluded.*

License number.	Name.	Organization.	Address.	Kind of produce handled.
			WATERLOO.	
614	Pratz, Kime & Pratz	Copartnership	Waterloo	Hay, straw, grain, fruits and vegetables.
			WATERTOWN.	
471	Calen & Co	Copartnership	221–225 Court st	General, fruits and vegetables.
492	Harrington Bros. & Smith	Copartnership	1 Printing House pl	Fruits, vegetables, butter and eggs.
176	C. J. Myers & Co	Individual	260 East Main st	Fruits and vegetables.
280	Mooney & Stewart	Copartnership	U. and B. yards	Fruits and vegetables.
240	E. H. Thompson Co	Corporation	200, 202 Solar building	General.

30.7 Stack
N48c

OF THE
UNIVERSITY OF ILLINOIS
2 APR 1915

STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

CIRCULAR 93

THE FARM BUREAU MOVEMENT IN NEW YORK STATE

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BY WAY OF INTRODUCTION

The addresses which follow were made before the New York State Agricultural Society at its seventy-fourth annual meeting in Albany, January 20 and 21. The address of the State Director outlines briefly the origin, development, means of financial support, purposes and policies of the Farm Bureau Movement in the whole State. The other three addresses, made by successful county agents who have been at work in their counties from 14 to 22 months, offer concrete examples of how the work is carried on. They do not cover all the lines of work under way, even in their own counties, and the methods of work and the things accomplished differ widely in some cases. The type of work done should fit the community needs.

The chief object in reprinting these addresses is to set before the people of the State an authoritative statement of the organization, policies and concrete examples of methods and kinds of work which have been done and which are now in operation.

Calvin J. Huson,
Commissioner.

THE COUNTY FARM BUREAU MOVEMENT IN NEW YORK STATE

M. C. Burritt, *State Director of Farm Bureaus*

The Farm Bureau idea is a part of the extension movement which marks the third great educational period in American agriculture. The passage of the Morrill Act in 1862, providing for the founding of the agricultural colleges and the teaching of agriculture, marked the beginning of the first. The Hatch Act of 1887 and the founding of the experiment stations marked the second. The third is likely to be made permanent by the passage of the Smith-Lever Bill, now pending in Congress, which will insure the carrying on of extension work in whatever form most acceptable to the people of the States.

While the county Farm Bureau, particularly that phase of its activities which relates to the State and to the National Departments of Agriculture and to the College of Agriculture, and the central office of administration is strictly extension work, it should be pointed out that it differs fundamentally from all other so-called extension agencies in that it is not projected from, nor does it directly represent any institutions outside of the counties. The Farm Bureau is, in this sense, a local institution organized by the people of a county. At present even the initiative in developing sentiment for a Bureau and in getting it started must come from the local people themselves. Afterward, this work is almost wholly in the control of the local people. The counties are, however, given the fullest cooperation of the central office, once they have decided to form local Bureaus.

It is obvious that neither State nor Federal funds can be expended without a certain amount of supervision. This supervision has now been centered in one office located in the College of Agriculture, and the interested parties, the National Department of

Agriculture, the State Department of Agriculture, and the State College of Agriculture, have now signed a cooperative agreement to exercise their functions through one man, known as the State Director of Farm Bureaus. Besides the general administrative work, the State Director assists the local county men by advice, suggestions, personal visits, and in promoting relations with institutions outside of the county. The central office is also a sort of clearing house of information and of the experience of the various Bureaus, receiving from each Bureau and passing on to all the others successful plans and lines of work as well as warning them against methods which have proved unsuccessful.

History of the Movement

The growth of the Farm Bureau movement in the United States has been very rapid. In 1911 there were scarcely more than half a dozen Bureaus. At the present time there are practically 200 Bureaus in the United States, 22 of which are in New York State. In this State the movement originated with the establishment of the Bureau in Broome County in the winter of 1911. This was soon followed by a Bureau in Jefferson County and another in Chemung County.

Work closely related to Farm Bureau work as we now have it in New York State, had for several years been carried on in the Province of Ontario, Canada. A report of the character and progress of this work was given by this Society at the annual meeting two years ago. In Bedford County, Pa., work very similar to our Farm Bureau work has been carried on for a number of years. Of course, the demonstration work in the South under the direction of Dr. Knapp is similar in many respects to our Farm Bureau work. It is, however, practically all confined to the demonstration of farm practice methods, and practically no work has been done in the South dealing with the larger problems of community organization and development such as is now being done in the North.

Following the establishment of the three Bureaus above noted, and encouraged by State appropriation and other outside aid, many other counties in New York followed the lead of Broome, Jefferson and Chemung. The following table gives the date on which the agents began work in the various counties and the total number of months worked:

County	Agent	Date Agent began work	Months of work
Broome	E. R. Minns	March 1, 1911	34
Chemung	G. P. Scoville	April 1, 1912	22
Jefferson	F. E. Robertson	April 16, 1912	22
Oneida	G. W. Bush	Nov. 1, 1912	14
Clinton	C. B. Tillson	Dec. 2, 1912	13
Herkimer	M. E. Chubbuck	Dec. 2, 1912	13
Niagara	E. H. Anderson	Feb. 1, 1913	11
St. Lawrence	C. S. Phelps	Feb. 15, 1913	11
Cortland	E. H. Forristall	Feb. 24, 1913	11
Franklin	O. F. Ross	April 1, 1913	9
Monroe	L. A. Toan	April 15, 1913	9
Wyoming	W. L. Markham	May 1, 1913	8
Onondaga	S. A. Martin	May 1, 1913	8
Cattaraugus	H. K. Crofoot	June 10, 1913	7
Allegany	F. C. Smith	July 1, 1913	6
Dutchess	F. H. Lacy	July 1, 1913	6
Oswego	H. M. Doyle	July 1, 1913	6
Tompkins	H. E. Babcock	Dec. 1, 1913	1½

Other Bureaus have been organized and will begin work as follows:

Erie	*W. L. Markham	Feb. 1, 1914
Otsego	F. S. Barlow	Feb. 1, 1914
Delaware	T. M. Avery	March 1, 1914
Montgomery	No agent chosen	

In addition to these counties, Ulster, Wayne and Columbia are considering the matter.

* Transferred from Wyoming county, which is without an agent now.

FINANCING THE WORK

The first Farm Bureaus organized in this State were principally by contributions from the National Government, from Chambers of Commerce and from railroads. The National Government is interested in promoting the movement as a means of bringing its large scientific staff into closer touch with farmers and farm conditions throughout the country. It is especially interested from the point of view of farm management in promoting better organized and more profitable farming. The Chambers of Commerce and railroads contributing to the work are interested from the point of view of business institutions desiring to increase the total amount and quality of business in their respective territories, and of removing any economic handicaps to farming along their lines, within their power to remove. They are also anxious to promote the work from the unselfish point of view of helping to bring about better agriculture. Both institutions deserve great credit for their enterprise. It is not too much to say that without their financial aid and interest, the Farm Bureau movement would have been much longer in reaching its present status in this State.

With the example of the first three Bureaus established in the State, much interest was manifested in the movement in the fall of 1912 and the winter following. The Crop Improvement Committee of Chicago offered financial aid and during 1912 they have contributed $9,000 to Farm Bureau work in New York State. But the greatest impetus was given to the movement in this State by a bill drawn by the Commissioner of Agriculture and enacted into law by the last Legislature. This bill appropriated $25,000 for Farm Bureau work, at the rate of $600 for each county. The measure provides that the county must raise at least an equal amount of money, either through appropriations of its Board of Supervisors or by other means. At the present time the Boards of Supervisors are the largest local contributors to Farm Bureau work in this State. Appropriations in various counties vary from $1,000 to $4,000, the average being between $1,500 and $1,800.

The railroad companies of the State have been enthusiastic supporters of this work from the start. The Lackawanna Railroad Company contributes $1,200 each for three Bureaus along its lines, in addition to passes to the agents in their various counties. This includes two counties which do not receive the larger contribution. The New York Central contributes $5 per month to each of the agents along its lines, together with a pass for each man in his own county. The Erie Railroad Company contributes a pass and $10 per month to the agents in counties along its lines. The Ontario & Western pays $5 per month and a pass to agents in counties through which it operates.

Individual local men have contributed comparatively small amounts, although the support of local men counts for much more than the actual dollars which they contribute. Membership in Farm Bureau Associations, which is put at $1 per year, is also adding to the local fund. I shall have more to say of this later.

The total moneys expended in New York State for Farm Bureau work during 1913 have been as follows:

United States Department of Agriculture..........	$12,000
New York State..................................	10,800
New York Railroad Companies..................	5,820
Chambers of Commerce.........................	4,900
Boards of Supervisors...........................	10,300
Crop Improvement Committee of Chicago..........	9,000
Individual contributions, including memberships in the Associations	2,400
	$55,220

The College of Agriculture has also contributed to the work in furnishing about one-third of the salaries of the State Director and the Assistant to the State Director, stenographic help, office equipment, and an office from which the work is administrated.

There is likely to be considerable change in the method of supporting Farm Bureau work in this State in the next year or two. The reorganization of the National Department of Agriculture is likely to result in the withdrawal of the present direct government support, although this may not be the case. The passing of the Smith-Lever Bill will provide a large Federal fund which may be used in part for Farm Bureau work. The disposition of this fund rests with the State, through its College of Agriculture. What part of it will be used for the direct support of local Farm Bureaus is a question yet to be decided. Undoubtedly, it is contemplated by the bill that some of the money will be so used. At least funds provided by this bill will probably be used to support the central office, and it is anticipated that the State will continue its present support.

Valuable — we might also say indispensable — as has been the support of outside institutions, it cannot be expected that this support will be continued indefinitely. There is a limit to the extent to which public-spirited individuals and institutions can go. No further funds are available during the present year, either from the National Government or from the Crop Improvement Committee of Chicago. Realizing this, plans are being laid to put

Farm Bureau work on a permanent basis in this State, and so to organize it that its principal source of support will be the local people whom it chiefly serves.

It is, therefore, the policy of the central office in charge of Farm Bureau development in the State, and of the local management of the Bureaus as well, to develop local membership. The average agricultural county in New York State contains between 4,000 and 5,000 farmers. There is no reason why at least one-half of these farms should not be represented in the local Farm Bureau by $1 membership. This in itself should constitute the most important source of support in the future.

As our present law relating to Farm Bureaus (chapter 712, Laws of 1913), is now drawn, it authorizes Boards of Supervisors to appropriate money for this work where there is a demand in the county for it. In most cases, this is being very willingly done, but in a few instances political expediency or influence has interfered with the desires of the people of the county. For this reason, it has been suggested to the Commissioner and others that the law (this would probably include the Township Election Laws as well as the Farm Bureau Law) be amended so as to permit the towns and the county to vote on the question of whether or not money should be appropriated for Farm Bureau work, in case the Boards of Supervisors were not properly responsive to the desires of the people. My own feeling in the matter is that it is absolutely necessary that this work be kept perfectly free from any political influence whatever.

I believe also that the law should be further amended so as to make the amount appropriated by the State to each county dependent upon the amount raised by the county itself, providing that the total sum contributed by the State shall not exceed a certain per capita of rural population. I do not believe that the State should contribute more than one-fifth or one-sixth of the total Bureau expenses, on the principle that the persons who benefit most from the work should bear the greater part of the burden of the expense.

Whether these are wise suggestions or not, we submit to you. Our sole aim and object in making them is to put Farm Bureau work on the fundamentally sound basis of self-help and self-support.

The Functions of the Farm Bureau

As we have already pointed out, a Farm Bureau is an organization of the farmers of a county. It elects its own officers, usually a President, Vice-President, Secretary and Treasurer, who is under bond. Its policies, lines of work and general methods are determined by a Board of Directors elected by the Association. An Advisory Committee is usually appointed, representing every town in the county. Sometimes this committee is the Board of Control.

The Board of Directors chooses and appoints the county agent and fixes his salary. This agent has no official connection with any outside institutions, except that he has to be approved by the State Director, if the Bureau wishes to receive State money and if the agent is to be appointed a collaborator of the United States Department of Agriculture so that he may receive the franking privilege.

There are some misconceptions as to the functions and the real purposes of the Farm Bureau. The greatest is that this institution has as its principal function, the giving of advice. Farmers to whom this idea has been advanced have very properly resented it and opposed a local Bureau developed along this line. It is true that there is much call for this part of service and it forms a part of every county agent's work. It seems important that we be careful not to overload our county men with this feature of the work. It is not fundamental; it is often superficial and unnecessary because not complete or not followed out, and this kind of work alone would not justify the expense and the effort put into a county Farm Bureau.

It is highly important that this very practical phase of our agricultural development be started on right lines, and put on a basis which will make it a permanent county institution. This calls for a clear and definite conception of its functions by those who lead in the movement locally. Unless they have higher ideals and bigger pieces of work for the Bureau and its agent to do than merely to give advice, for which the agent is often not so well qualified as the more highly trained specialist which we have already, the Bureau had better not be organized.

As the leaders of the movement in the National Department of Agriculture, in the State Department of Agriculture, and in the

State College of Agriculture conceive the functions of the Farm Bureau, they are, in order of their importance, as follows:

1. The federation and organization of all the agricultural forces of the county to a common purpose.
2. Agricultural leadership in its broad sense.
3. Organization of Cow Testing, Seed Improvement, and similar associations.
4. The organization of buying and selling agencies for supplies and products.
5. The study of the local economic conditions of the county with the viewpoint of affirming or improving, as the case may be, the local farm management and farm practice of the county.
6. The demonstration of better methods of farm management and practice.
7. The giving of personal advice to farmers on farm practice and farm management.

All these functions should be exercised with the point view of increasing the financial profitableness of farming within the county by increasing the net incomes of farmers, and of making country life and work increasingly worth while in the larger sense.

When we come to take an inventory of the forces which are working toward a better agriculture in the county, we find that they are many. In almost every county we find some department or agent of either the College of Agriculture or the Experiment Station or the National Department of Agriculture at work. In every county, Farmers' Institutes are held and in many, extension schools. Cooperative experiments of various sorts are frequently carried on. Every county has its local fair. In many counties we find boys' and girls' clubs. So also in almost every county we find a local agricultural society, a county grange and many subordinate granges. A large number of counties now have teachers of agriculture in one or more of their high schools. The agricultural and industrial agents of the railroads are endeavoring to improve trade conditions within the county. All these and many other agencies, while they have the same general purpose in view, namely, the improvement of agriculture in the county, are not always working in close cooperation and without duplication of effort. A primary function of the county agent is to bring all these forces together in such a way that their efficiency in working out local problems will be increased.

In New York State, almost every community feels the need of cooperation. Many communities are now ready to cooperate. What is needed more than any other thing is leadership. A qualified man is wanted who can give a portion of his time and energy to developing and organizing cooperative associations, with the help of the State Superintendent and others interested in this phase of work. Such a man cannot exercise this leadership alone, but he may be the agent of individuals or forces in a county who need just this man's help and energy.

No small part of the county agent's work, as I view it, is the organization of associations for the improvement of various phases of the county's farming. Perhaps the most notable among these, and the ones which have been best developed in this State, are the cow testing associations and the seed improvement associations. In several counties a number of cow testing associations have been promoted and organized by the county agents with the institutions of the State. A very successful potato seed improvement association has been organized in one of the counties.

A phase of the county agent's work, which is a most popular one with farmers but one in which great care has to be exercised, is the organization of buying and selling agencies for the securing of supplies and the disposition of products. It is a legitimate function for the county agent to encourage and to promote such organizations, when it can be clearly shown that they benefit the farming community as a whole. This is a matter, however, in which much judgment should be exercised. It seems wise to handle this work by means of committees of the Farm Bureau Association or by means of subsidiary cooperating companies. The county agent should never be asked or permitted to handle funds or to hold office in any organization for buying or selling for profit. He may, however, at all times advise as to methods, and counsel with committees and directors when his advice is sought.

The fifth function of the county agent, and a most important one, is the study of the local economic conditions of the county, with the viewpoint of affirming or changing, as the case may be, the local farm management and farm practice of the county. While this may be done to some extent by means of observation or talking with prominent farmers of the county, the safest and most conclusive way in which to get at the economic conditions of local farming is the farm survey. We believe that at least enough of this work should be done to give the county agent the point of view of the farm business as a whole. If he is able, without interfering with more important work, to collect statistics from a large number of farmers, he is afforded a valuable source of information in seeking the best plan of organization for individual farms. We do not think, however, that this type of work should occupy more than 10 or 15 per cent. of the agent's time.

The demonstration of better methods of farm practice and of farm management is a function of the county agent. We do not believe that he should be an investigator, except in so far as he may collect and digest local data and interpret local experience. It frequently happens that the demonstration of a method which is well known in the State at large or which has been clearly worked out by the Experiment Station, may result in calling the attention of the community to this method in a striking manner. A considerable amount of this work has been done by the local agents with very good results. While we do not regard it as the most important function of the agents, nevertheless it has much value in many localities and should be used wherever the benefits to be derived from it are clear.

The function of the county agent, which I have put last for reasons already set forth, is the giving of personal advice to farmers on farm practice and farm management. Probably more of this kind of work has been done by agents up to the present time than any other method of work. This has been because it has been demanded by people of the counties in which agents have worked, and because it has seemed necessary in order that the agents might get in closer touch with individual farmers and with their problems. It is a rather dangerous method of work. Few agents can understand the problems of an individual farmer as well as that farmer himself without giving a considerable time and study to them. Some kinds of advice may be given safely, such as how to spray, what to use, the liming of land, pruning of trees, etc. The kind of advice, the object of which is to materially change farm practice or management, should be very cautiously given. In all cases, when advice is given it should be with the point of view of increasing the profits of the year's business of the whole farm, rather than with reference to its effects on the profits of any single enterprise.

All of these functions should be exercised with the point of view of increasing the financial profitableness of the farming within the county by increasing the net incomes of farmers and with the viewpoint of making country life a work increasingly worth while in the larger sense.

This talk may have seemed to some too general. It has been made so purposely in order to bring before you the general methods of organization, financing, policies and functions of the Farm Bureau movement. The three speakers who follow me on this subject are all men who have had considerable experience in county work. They have made good in their counties and they will give you some of the details of their methods of work which will be more definite. We all recognize that very much depends on the man. Each of the county agents who will address you represents a little different method of work, each successful under local conditions.

A BRIEF OUTLINE OF THE JEFFERSON COUNTY FARM BUREAU WORK

F. E. Robertson, *County Agricultural Agent*

The Jefferson County Farm Bureau was inaugurated April 16, 1912. It has been in operation, therefore, during the past twenty months.

In the beginning the Farm Bureau idea was new and the best methods for the county agricultural agent to attack his local work were not known, in fact the best methods, if there are any best, are not yet known, although we may now have a clearer conception of some lines of work that the county agent should do in the beginning. As the agricultural practices in every county differ in some respects from those in another, and as the men who become county agents may have different capacities for doing work, the methods employed in carrying out the work in different counties will differ more or less.

In beginning the work in Jefferson County, our first plan was to become intimately acquainted with the people and agricultural conditions. This was accomplished at first by visiting the various granges and driving about the county for a few weeks. As the requests from the farmers to visit their farms and to advise with them regarding many different lines of work, were numerous to begin with, much of our means for getting acquainted has been accomplished in this way. The practice of visiting individual farms has been followed, however, only after receiving a request from the owner for such a visit, or except where some farmer was doing something particularly commendable, in which case visits were made for the purpose of securing information.

In order to acquaint the farmers quickly with the nature and purpose of the Bureau, placards were printed and hung in the grange halls and railroad stations, post offices, etc., throughout the county, briefly announcing the Farm Bureau and its purpose. To a limited extent circular letters were also used for this purpose.

Conditions in Jefferson County have not been such, since the Bureau was inaugurated, that we have had to look for work. There has always been more requests for cooperation, conference and advice than we have found time to look after as closely as we would liked to have done.

In Jefferson County it has been the plan of the Bureau to teach by the demonstration method. Careful investigational studies have not been carried on to any extent for the reason that we were fairly well acquainted with the average farm practice, and because of the fact that the State College of Agriculture had formerly carried on a farm survey over the important towns in the county.

We do not plan to experiment for the reason that we are not in position to exercise the technical care in checking the work that should be done in experimental work. We have tried to put into practice the best known methods of farm practice and farm management and to demonstrate the local application of these principles on farms in different parts of the county. If the average farmer could be induced to practice the better known principles of farm practice and management as we now know them, his efforts would be rewarded with greater returns and his standard of living raised. For this reason we feel that we should try and perfect our practices to conform to the best we now know, rather than begin to search for other methods and factors, at the expense of neglecting to put into practice common principles of agriculture we know to be right.

Our cooperative field demonstrations are arranged during the winter months very largely. At this season of the year we have time to discuss the ways and means for doing better work. With those farmers who evince the greatest interest, arrangements are made to carry on some one or more lines of field work for the purpose of determining whether better results may be obtained. We aim to make each field demonstration an object lesson. As a rule the results secured from these field demonstrations are checked up as closely as possible under the conditions, and the results published in the county papers, and in the form of what we call local bulletins. These local bulletins are reprinted annually, showing the progress made with a particular line of work, and are mailed to several hundred farmers throughout the county. The purpose of these local bulletins is simply to tell briefly the work done, the results secured, and to point out the local application of the principles involved. They are not intended to repeat matter that has been published elsewhere. They assist materially in spreading the information rapidly and cheaply.

The local county papers are made use of to a large degree. Through these mediums are published timely articles calling attention to various matters agriculturally. The county press, as a rule, is pleased to secure this material, and in this way ideas are disseminated rapidly.

Jefferson County is a very strong grange county. The Bureau works closely with the granges in many lines of work. With thirty-three subordinate granges in the county we manage to visit each at least once a year. On all such occasions, when requested to speak before these organizations, we strive to illustrate our talk with materials intended to show practical methods for doing better work. These object lessons are appreciated.

So, too, use is made of the stereopticon lantern to illustrate an evening lecture. Lantern slides are made of the work being done within the county, which, owing to the fact that the picture may have been taken in the vicinity, adds interest to the topic.

Through the medium of the Farmers' Institutes much cooperative and follow-up work is carried on. It does the farmer but little good to attend an Institute unless he takes away with him a new idea that he will put into practice on his farm. The Farm Bureau plans to get hold of as many farmers as possible during the Institute sessions for the purpose of pledging or encouraging them to practice some of the principles with which they have become acquainted. In these instances we assure the farmer our cooperation and support.

Up to the present time, in Jefferson County, we have not found time to do much in cooperation with the county school superintendents as regards visiting schools. It is doubtful whether we will have time for this line of work. One line of work we have done, however, is that during the past season, together with the school superintendents, we successfully carried on our first farm boys' corn growing contest. This line of work with the young people has resulted in much good feeling. We expect to carry it on with greater vigor another year, placing the work largely in the hands of the school superintendents.

It would seem that cooperation with every agency or organization extant, within limits, should be an important point for the county agricultural agent to keep in mind. It is one of the policies of this Bureau to try and secure and make use of the specialists in agricultural matters from the Federal and State Departments of Agriculture, and from the State College and Experiment Stations for the purpose of bringing into Jefferson County, and encouraging our farmers to practice, the best known methods. We are constantly referring the more technical questions to the specialists, or requesting their presence in the county to inspect conditions and give advice regarding the more technical matters. In this co-operation we make use of the other fellow. Stated in another way, our point of view is that nothing, agriculturally speaking, is too good for Jefferson County.

What does it matter who gets the credit so long as the work is well done? There is a great deal to be accomplished by making the other fellow believe that he is doing the work and getting the credit. In Jefferson County we strive to make use of the other fellow and let him have the credit.

The chief agricultural problems of the county, from a general point of view, have to do with maintaining and increasing the soil fertility from which crops are grown to sell, and with increasing the productive powers of the dairy herds from which the greater portion of the farm income is derived.

The cropping system has been such that the soils in many instances have become partially impoverished. One of our problems is to encourage a system of cropping that will at least maintain average production of hay, grains, and corn.

We are attempting to bring this about by encouraging the growth of more leguminous crops, drainage, lime, and fertilizers judiciously employed.

About 80 per cent. of the total average farm receipts in the county is derived from live stock and stock products, chief of which is dairy products. Any material increase in the production of dairy products per cow will materially increase the income to the farmers. With this in mind we are encouraging the practice of keeping production records with the cows for the purpose of eliminating the low producers and less profitable animals from the average dairy herd. Three cow testing associations have been organized during the past year. While this is but a small start, when it is considered that in the county there are over 66,000 dairy cows, it is nevertheless a beginning.

The use of herd bulls with known breeding for production is also being urged.

The growing of legumes and early maturing silage corn for the purpose of cheapening the cost of milk production from the standpoint of feed cost is being urged. The vetches and soy beans, during the past year, have become very commonly grown and promise to add materially toward a better and cheaper feeding standard.

While it is quite possible to prove to the farmers that by reorganizing their farm business they would be enabled to make larger incomes, we find that they are sceptical or unwilling to make a serious effort to effectively carry out the things necessary for them to do in order to make this larger income.

For example: We have excellent evidence that the farmers who are making labor incomes above the average in the county are doing three things.

1. They are farming larger farms than the average,— over 143 acres.
2. They are keeping better cows than the average.
3. They have several important sources of income in addition to that derived from sales of milk and hay.

Expressing this in terms of dollars it would read as follows:

Average labor income (670 farms, average size 143 acres), season of 1910	$609
Average labor income, 23 farms, best cows and crops	994
Average labor income, 71 farms of over 200 acres in size	1,044
Average labor income, 31 farms over 200 acres with best cows and crops	1,567
Average labor income, 13 large, diversified, best cows and crops	1,968

In spite of this evidence, few farmers are going to increase the size of their farms; perhaps a few will endeavor to keep better cows; another few will see the advantages to be derived from greater diversity of occupations; some may work into a combination of these factors, but the majority will always be with the average and will make a labor income somewhere between $400 and $600 per year.

The purpose of this report is to briefly tell how some of the work was begun and what methods were employed in doing it. For the sake of brevity, therefore, the different lines of work undertaken, accomplished, and that are under way will be epitomized as follows:

DIFFERENT LINES OF WORK IN PROGRESS, AND COMPLETED

1. Organized three Cow Testing Associations,— sixty herds,— 1,325 cows.
2. Established a Live Stock and Seed Exchange —beginning January 1, 1914.
3. Organized a Farm Boys' Corn Growing Contest,— ninety-two boys participating. Raised over $200 for prizes in this connection.
4. Held one Extension School of Agriculture. Cooperation State College.
5. Engineered two Farm Boys' Stock Judging Contests at county fair.
6. Farmers visited on their farms,— over 1,200 in twenty months.
7. Addresses given before farmers' meetings and granges, twenty months, 125.
8. Field demonstrations, 1913,— 18, reaching 360 farmers.
9. Published local press articles,— twenty months — seventy-five.
10. Published four local bulletins, and six circular letters.
11. Cooperated with State College in plant improvement demonstration train through county, one week, reached 1,650 farmers.
12. Took part in eighteen Farmers' Institutes,— twenty months —reached over 1,800 farmers.
13. Breeding heavy yielding types of hay,—past twenty months — twenty-five farmers.
14. Seed improvement with potatoes,— tuber-unit work, 1913, thirteen farmers.
15. Corn variety tests, 1913, three farmers.
16. Field trials with soy beans for seed and with corn, 1913, twenty farmers.
17. Field trials with winter vetch, 1913, eight farmers.
18. Orchards pruned and sprayed, 1913, three farmers.
19. Weed spraying demonstrations,— in oats, 1913, four farmers.

20. Pasture improvement begun,— reseeding, 1913, five farmers.
21. Fertilizer work, topdressing meadows, 1913, six farmers.
22. Oat smut and variety tests of seed oats, 1913, twelve farmers.
23. Alfalfa — variety tests — Grimm and Turkestan, twenty months, five farmers.
24. Cropping systems planned and followed, eight farmers.
25. Soil improvement work started,— green crops plowed down, — three farms.
26. Lime demonstrations begun and under observation for results, six farms.
27. Farm accounting systems begun past twenty months, five farmers.
28. Drainage systems planned and demonstrations given, 1913, three farmers.
29. Through Farm Bureau Labor Exchange, assisted more than 150 farmers in securing laborers.
30. Numerous lines of work of greater or less importance.

FARM BUREAU WORK IN ONEIDA COUNTY

G. W. Bush,

Assistant Agriculturist, United States Department of Agriculture

This Bureau installed a representative in the field November 1, 1912. The first two weeks were spent in getting familiar with the methods of operation pursued in other counties. Some further time was spent in getting familiar with the county and becoming acquainted with the people and their problems.

Orchard Work

The first direct work was started with several orchards that had long since begun to decline. Eight of these were secured for cooperation, but owing to the inability of the owners to get the work done, only five completed the pruning.

In pruning, care was taken to remove all dead wood and all superfluous branches preserving at the same time as many of the lower limbs as possible. Usually six or seven main leaders were left, with enough side branches to fill in uniformly all the space above and below; in many cases the amount removed exceeded the amount left. In doing away with this surplus wood great care was taken to make the cuts very close and to paint them over with some cheap lead and oil to insure quick and perfect healing.

All of these orchards were sprayed with a dormant spray for scale, etc., before any growth started in the spring and again with lime sulphur and arsenate of lead, summer strength, for moth and scab, just as the petals were falling from the bloom and then again in about ten days. A June frost injured several of these orchards at this time, causing most of the blossoms to fall. However, five had already been plowed and manured and were harrowed occasionally until July 1, when clover was sown. As a result, the trees have grown an abundance of young wood and buds. They carry a deep green foliage and are now standing ready to give a good yield next season. Two of the orchards mentioned, which were very carefully tilled, were in a somewhat sheltered locality and were too far advanced to be seriously injured by frosts. They have yielded from twenty-five to thirty bushels to the tree, or, in one case, 1,000 bushels and in the other nearly as many again.

The apples from one of these orchards were packed in hampers in three grades and are selling for $1.50 per bushel for No. 1, $1.25 for No. 2 and $1.00 for No. 3. Practically 98 per cent. have a diameter of greater than 2½ inches and are free from scab and worms. As the crop is not all sold it is impossible to give the net results from this work. However, it is fair to say that it will be approximately $26.00 per tree, after the cost of pruning, manuring, cultivation, spraying, clover seed, picking and marketing is deducted. There are 100 trees in the orchard, forty of them in bearing this year.

It might be of interest to state here that through the work instituted by the Farm Bureau in the orchards, and as a result of meetings, personal visits and agitation, one company that had never sold lime sulphur or arsenate of lead before disposed of over 500 gallons lime sulphur solution, 500 pounds soluble sulphur and over 200 pounds of arsenate of lead during the past season. During the same period at least three other companies dealing in the same chemicals sold a considerable quantity of lime sulphur and arsenate of lead in Oneida County. On account of the unusually late frost much of the material was wasted. The same should mean a good many dollars' profit in any ordinary year.

Meetings

During the first year of the Farm Bureau, meetings have been held in various parts of the county and two general county meetings have been held with several hundred in attendance. On three occasions, the Farm Bureau's representative has spoken, by invitation, at meetings in different parts of the State, outside of the county. At the Oneida County meetings the subjects discussed were, for instance, lime and liming, rations, fertilizer, orchards, with special reference to renovation of old trees, and spray with reference to potatoes. In fact, at the different gatherings nearly all subjects of interest to the farmers have been treated. The meeting places have been open fields, farmers' homes, school houses and town halls. The total number of these meetings was thirty-four and the average attendance sixty-one.

Following is a table showing the visits made to the individual farmers in different towns and the subject under discussion. Many

SUBJECTS.	TOWNS.																					
	Augusta	Ava	Boonville	Bridgewater	Camden	Deerfield	Kirkland	Marcy	Marshall	New Hartford	Paris	Remsen	Rome	Steuben	Trenton	Verona	Vernon	Vienna	Sangerfield	Western	Westmoreland	Whitesboro
Orchard	....	....	....	1	1	....	30	....	2	76	32	1	1	....	2	3	3	....	2	....	....	20
Alfalfa	....	1	....	6	....	6	4	....	4	24	4	1	....	....	3	8	9	1	12	8	....	11
Potato	....	....	1	....	....	....	6	....	....	8	21	....	....	....	....	....	....	....	....	....	....	....
Corn	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	....	....	1	....	....	....	....
Dairy	....	4	....	....	1	2	2	....	....	4	1	1	....	....	....	1	3	1	1	....	....	1
Cow Testing Association	16	5	....	....	1	1	6	....	9	....	....	....	1	6	....	3	5	....	1	41	....	....
Drainage	....	....	....	....	1	1	2	1	....	4	1	3	1	....	2	4	1	3	4	....	1	1
Fertilizer	....	1	....	....	....	....	....	....	1	3	....	2	....	....	....	....	....	1	....	....	....	....
Lime	....	....	....	....	2	....	....	....	1	6	1	3	1	....	....	4	....	1	....	....	....	1
Pure-Bred Cattle	....	1	1	....	1	2	....	....	4	....	....	1	....	....	1	....	....	....	1	1	....	....
Farm Management	....	....	3	....	....	3	....	....	1	4	2	1	1	....	1	1	1	2	....	1	....	1
Rejuvenating Farms	....	....	4	....	....	....	....	....	....	....	....	1	1	....	....	....	....	1	2	....	....	....
Seeding	....	....	....	....	1	....	....	....	....	....	....	....	....	....	2	....	1	....	2	....	....	....
Hops	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	6	....	....	....
Soy Beans, Vetch	....	....	1	....	....	....	....	....	1	....	....	....	2	....	....	3	....	1	....	1	....	....
	16	12	10	7	8	15	51	1	23	132	62	14	8	6	11	27	23	13	31	52	1	35

of these visits resulted in cooperation between farmers and the Bureau. The table indicates a wide degree of interest, including besides those enumerated: meadows, berries, poultry, weed extermination, silos, soy beans, cannery crops, and horse breeding, assisting purchasers and sellers of pure-bred live stock, dynamiting soil and seeking farms for strangers in the county. In making the visits 1,565 miles were traveled by automobile, 1,437 by horse, and 3,410 by railroad. Estimated number of callers at office, 300; inquiries by mail and telephone, 500.

Cow Testing Associations

During the winter and spring of 1913 about three weeks were occupied by the Farm Bureau in forming Cow Testing Associations. There are now three of these organizations in the county. The oldest, known as the Waterville Cow Testing Association, was formed before the Farm Bureau came into existence. The others, known respectively as the Westernville Cow Testing Association, under the leadership of Thomas M. Carroll, of Western, and the Knoxboro-Deansboro Association, carried on by John D. Ludeman, of White Plains, were formed by the Farm Bureau in cooperation with the New York State Department of Agriculture. These associations are doing excellent work and letters come in repeatedly from individual members speaking in high terms, and from experience, of the results that are bound to come. At the present time, requests are on file from two other sections, asking that associations be formed there. This will be done as soon as the press of fall work is ended.

The plan of this work is, wherever possible, to have the farmer weigh the milk each day. The tester visits the farm one day each month and, unless done by the owner, he, the tester, weighs the milk, testing it for butter fat, weighs the feed, computing from the result the cost of maintenance, and the net revenue. This makes every individual cow stand on her own merits and by this method the robbers and boarders can be easily cut out from those that pay. There are about 1,500 cows on this sort of a business basis in the county. Besides this, in some instances the associations are doing semi-official testing for pure-bred herds under the rules of the different pure-bred associations.

A Fair Price for Lime

Perhaps the greatest work done by the Farm Bureau and its friends is that of establishing a proper price for lime in Oneida County. The established price for lime in Oneida County previous to the installation of the Farm Bureau ran from $4.00 to $7.00 per ton. One of the Bureau's first tasks was to investigate this unfair situation. After a thorough search a bottom price was secured through the Rock Cut Stone Company of Rock Cut, N. Y. This firm was willing to furnish limestone, ground fine and analyzing 90 per cent. total carbonates, for $1.35 per ton f. o. b. at quarry. Next we found that the Delaware, Lackawanna & Western Railroad, controlling transportation from the quarry, were charging an irregular rate on ground limestone, unintentionally discriminating against several towns in the county. At this point the Farm Bureau, in connection with the Utica Chamber of Commerce, took the matter up with the Delaware, Lackawanna & Western Railroad. The railroad was fair in the matter, and as a result no place along the lines of the Delaware, Lackawanna & Western Railroad in Oneida County has a rate on ground limestone exceeding $1.00 per net ton in carload lots. Later, through the assistance of Mr. Welsh, Agriculturist of the New York Central & Hudson River Railroad, and the Sugar River Stone Company of Boonville, N. Y., we were able to secure lime, ground fine and analyzing 95 per cent. total carbonates for $1.35 per net ton on cars at quarry. The New York Central & Hudson River Railroad has reduced the rate 30 per cent. on car shipments from all quarries that charge less than $1.50 per ton for ground limestone. This lowers the price of ground limestone so that at no station on these railroads in Oneida County a farmer need pay over $2.35 per ton for good ground limestone delivered in carload lots. At many of the stations it is less than $2.00 per ton delivered. In the short space of time these improved rates have been in force, over thirty cars have been delivered, and orders for twelve cars additional were cancelled because of shortage of cars. A much larger amount will be delivered the coming winter and spring.

The Farm Bureau carried on several cooperative tests with the use of fresh-burned lime and ground limestone on clover seeding at time of sowing. These fields are in widely separated parts of the county and represent many varied conditions. While next year will be the time to find out whether the lime is beneficial or not, it is safe to say that nearly all these fields are looking promising at present.

Potatoes and Corn

The Farm Bureau has also carried on cooperative work on potatoes. One plot has been used for the purpose of improving seed by breeding and selecting. A variety of blight resisting potatoes was planted on May 5 to breed from. They were cut into two eyes and the pieces from each potato planted separately in adjoining hills in order to determine the yield from each potato. At harvest the product from each potato was weighed and kept separate and all plants producing over six good tubers kept for the breeding work next year, discarding the product from any individual hills that seemed to be inferior. This field was planted on sod in a small orchard, manured at the rate of fifteen loads per acre with fresh horse manure and 250 pounds per acre of a 1.65-8-10 fertilizer. We realized at that time that a 1.65-8-10 was not considered a proper fertilizer for potatoes, yet locally we were unable to secure a better grade. These potatoes were planted here in the young orchard as much to give the young trees tillage and fertilizing as for the crop of potatoes. We might add here that, besides the crop of potatoes, which yielded at the rate of 242 bushels marketable potatoes per acre, we have growth on our trees three years from setting of from fifteen to twenty-four inches of new wood. The potatoes were sprayed with Bordeaux mixture five times; this, together with cost of tillage, manure, fertilizer, harvesting, interest, etc., brings the cost per acre, in this case, up to $60. At the rate of $1.00 per bushel, the net income per acre of potatoes will be $182. These potatoes were cultivated six times during May and June and hilled with a horse July 8. They were not hilled by hand.

Besides this field, cooperative spraying with Bordeaux mixture for blight was undertaken in several other fields. Blight was not serious this year, striking only in spots. One of the important cooperative spraying fields was located in Paris township. Here a field of five and one-half acres was sprayed with Bordeaux mixture and four rows through the field were left. The soil was the same and otherwise the treatment was the same in fertilization, cultivation and tillage. The yield on the unsprayed rows was at the rate of 144.7 bushels per acre and on the sprayed rows next, the yield rate per acre was 190.36 bushels. The total cost per acre of spraying five times from June until September, was $6.75. It can be seen that the difference in yield per acre, as shown from this, was 45.6 bushels or at $1.00 per bushel, a difference in net income of $48.91 per acre.

In our work in committee last spring, through the cooperation of District School Superintendent Ray P. Snyder, seventy-five "Rag Baby" seed corn testers were placed in forty-five different schools about the county and used for the good of the schools and neighborhoods in which they were located. We also sent out bulletins through the newspapers in the early spring, urging farmers to test their seed corn before planting.

The Bureau planted one small field of approximately one-half acre, ear to row method. The seed was tested and the kernels of no ear that would not germinate in excess of 90 per cent. were planted. First, rows from 1-18 were planted from seed from ears 1-18, the number of the ear corresponding with the number of the row. Then starting with ear 1 and going to 18 again, rows 19-38 inclusive, were planted. The variety used was Luces' Favorite, a silage corn. It was planted 3½ ft. x 3½ ft., three plants in a hill, with intention of growing silage seed in this altitude and latitude. It is a well known fact that too much half-grown watery corn is used for ensilage in this section, and that an effort should be made to induce the farmers to grow a corn which will not only give a maximum of dry matter, but a quantity of good mature ears.

This corn was planted May 12 and came up with but one skipped hill. Seven loads of horse manure and 200 pounds of a 1.65-8-10 fertilizer were used on the field, which approximates a half acre. It was cultivated eight times from May 20 to July 15 and hand hoed once. No weeds were present, and the corn was kept growing all the time in spite of the drought. This corn furnished a mature stalk ten feet high in the better portions, each stalk bearing an ear that showed maturity the first week in September. It is now in the shock and no weights have been made so far. This will be done later, and the most mature specimens from the highest producing mother ears will be preserved for seed.

FERTILIZERS

We had three cooperators with fertilizer, one with nitrate of soda on timothy hay, one with nitrate of soda on hops and one with various amounts of home mixed fertilizer with different proportions of nitrogen, phosphoric acid and potash. The last was undertaken late on a very poor field and, owing to the dry season, very little became available. The nitrate of soda on the hay was applied broadcast on May 26 at the rate of 150 pounds per acre, and cost $4.50. The yield of hay was eight tons of field dried hay No. 1 timothy from 1 3-5 acres. The yield per acre was 5.7 tons, or 1.7 tons increase over 1912 when no nitrate of soda was used. Allowing one-third for shrinkage, the yield of mow-cured hay would be 3.8 tons, or 1.1 tons increase over 1912. This would point toward the value of the use of nitrate of soda on timothy, especially where there are plenty of good plants. The hay over the field was fine, over four feet high, and when cut lay so thick on the ground that it was almost impossible to rake.

The nitrate of soda was sown on the hops at the rate of 100 and 200 pounds per acre at different dates, June 16 and July 1. At picking, the difference was not very apparent between the treated and the untreated. The whole field was in excellent state of tillage and fertility; all were well filled. While the results were not very pronounced in this case, we are of the opinion that on a field which is not regularly fertilized with barnyard manure, the yield would be increased materially.

We also tried nitrate of soda on raspberries at the rate of 200 pounds per acre just after they were set. The season was very dry, yet the crop was good. No checks were left, so that it would be impossible to tell to what extent the nitrate was of benefit.

The Farm Bureau has interested several, who were short of barnyard manure and had semi-abandoned fields, to sow rye and vetch for the purpose of plowing under. In some cases the land was limed and inoculated; in some cases limed and not inoculated. In other cases neither lime nor inoculation was used. This will afford an opportunity to note the value of lime and inoculation on vetch. This crop, in most cases, will be plowed under next May or June. Besides the vetch for plowing under in open fields, we have used it in a small way on a field of raspberries. Of course, it is too early to tell anything definite about this. Several packages of soy beans, vetch and alfalfa were received by different farmers in the county, through the courtesy of Congressman Charles A. Talcott, who wisely gave up half of his allotment of garden seeds and sent, instead, considerable amount of seed of these valuable forage and nitrogen-gathering crops.

Quack Grass Eradication and Drainage

We have, at least, two different cooperators who were trying the Department methods of quack grass eradication — that of plowing in July and August and harrowing weekly through until fall. This seems to work well. We have also helped lay out several drainage propositions, and have secured a promise from the Agriculturist of the New York Central & Hudson River Railroad that he will send a new gasoline ditcher to our county to dig several hundred rods of ditch early next spring.

Public Exhibits

The Farm Bureau has endeavored from time to time to furnish the various papers, both daily and weekly, with seasonable articles on various farm operations. The aim has been to adapt these articles to local problems. Among articles published were those on lime and its uses, renovating old orchards, alfalfa and how to grow it, Bordeaux mixture for potatoes, etc.

At three of the fairs in the county we helped to supply exhibits of an educational nature. At the Rome Fair we helped put through a movement to conduct a Cow Testing Contest for the three days of the fair. This was under the management of Mr. Thomas M. Carroll of Western (Cornell Agricultural College, 1911), who for the past six months has very ably conducted the Westernville and Ava Cow Testing Associations. The contest was conducted during the time of the fair; a first prize of $10, and a second prize of $5, was given for the cows making the most butter fat during the three days of the fair. All cows were milked dry at the beginning and all closed at exactly the same time, all breeds competing. The first prize was won by B. T. Boyson, R. F. D., Rome, N. Y., on the Pure-Bred Holstein cow, Fantesy Carlotte 2nd Hengerveldt, No. 108522. The second by a Pure-Bred Holstein cow, owned by Virgil Smith, R. F. D., Rome, N. Y. At the

Paris and Vernon Fairs, we displayed two boxes of fine apples grown in the town of New Hartford, showing the result of tillage, fertilizer and spray. Along with these we displayed the ordinary apples from neglected trees to show the effects of lack of vitality and too many limbs, together with marks of scale, scab and codling moth. With these we displayed two hampers of potatoes, showing the increased yield of sprayed over those not sprayed with Bordeaux mixture. Exhibits from the orchards under our care took prizes wherever they were exhibited.

Farm Labor

We have endeavored to help those who applied to us for farm labor. The New York State Department of Agriculture maintains an office for the purpose of securing farm help among the foreign laborers in New York City. Through this office we have secured about twenty-five. Only four of this number, so far as we have been informed, failed to be satisfactory. Record is kept in the New York office of all sent out, so that the second time they apply for work it is understood whether or not they can be recommended.

Alfalfa

Another important thing that the Farm Bureau has done this year is to cooperate with farmers in different parts of the county in the growth of alfalfa where it does not grow naturally. In all, we sowed six fields in June and four in August, varying in size from one-half to two acres. In our June sowing we plowed a corn stubble in the fall, manured during the winter, limed early in the spring with either fresh-burned or ground limestone, harrowing into the soil as we fitted the fields. We began harrowing early and kept this up from time to time until the middle of June, when we sowed 400 pounds per acre of soil from a good alfalfa field, taking care not to expose it to the sun. After this was well harrowed in, we sowed from the grass seeder of a grain drill thirty pounds per acre of good alfalfa seed alone and then rolled. All of these fields have been cut once and some twice, and left on the field during the past seasons, and all are going into the winter in excellent condition. In the August sowing we plowed corn ground in the fall, limed with ground limestone or fresh-burned lime in the early spring and sowed to early peas. These came off in early

July and the fields were plowed again and manured with barnyard manure and harrowed several times between then and August 10, when 400 pounds to the acre of soil from an old alfalfa field was sown with the same care as before. Following this, seed was sown and rolled as in June sowing. These fields all look well, though the growth is not as hardy to stand the winter as the June sowing.

Summary

It would seem that the Bureau has been of real practical use during the past year and that there is considerable direct financial benefit that the farmers have received. As, for example, we would point to the rates on lime, to the success with alfalfa, apples and potatoes. However wide our acquaintance may be and whatever results may have been accomplished, we hope to reach out farther during the coming year and increase our endeavors along these same lines.

THE SURVEY METHOD OF FARM BUREAU WORK AS APPLIED IN CHEMUNG COUNTY

G. P. Scoville, *County Agricultural Agent*

The method as developed and perfected by Professor Warren of summarizing a farm business for the purpose of finding the labor income of the farm operator has been of considerable use to our Farm Bureau.

By this means we have become acquainted with the farmer and his business in a rather complete way. The record also helps the farmer to become better acquainted with his own business. We return a summary of the record similar to these charts to the farmer.

The factor of most interest to the farmer and the agent is the "Labor Income." The labor income represents what the operator of the farm receives for his year's work. This farmer (see chart 1) has a labor income of $41. Subtracting his expenses of $993 from his receipts of $1,348 leaves $355 as income from the operator's labor and capital. The interest on the investment of $6,282 at 5 per cent. is $314 and subtracting this from $355 leaves $41 as his labor income.

On the other side of the outline returned to the farmer are averages for comparison. The average labor income of 270 hill farms is $238. Of these 270 farms, sixty-one made a labor income of minus $173. There are forty-five of these farmers that made a labor income of over $500, averaging $858. This gives a scale or standard for comparing farms. The agent and the farmer thus know that on the hill lands in Chemung County about one farmer in six is making a labor income of over $500. They also know that the average hill farmer is making $238 a year and that one farmer in four or five makes less than the 5 per cent. interest and nothing for his labor. The farmer from whom this record was taken can see that the average farmer is making six dollars to his one. His business has been measured and both the farmer and the agent now know how successful it is and how it compares with the average, the best and the poorest farmers in his vicinity.

It is a comparatively simple matter to analyze or factor a farm business and find the causes for success or failure. It is easy since in practically all cases there are but four factors or conditions, any of which if deficient may cause failure. These factors are Size, Diversity, Productiveness, and Labor Efficiency.

Let us compare this farm with the three groups in respect to these factors. The best measure of size is the ten-hour man work days necessary to raise the crops and care for the productive stock. On the average farm there are 277 such work days while the most successful farms have 454 and the poorest 237. The larger profits are made on the larger farms. This farm has a size a little better than the average. The number of crop acres are sixty-one on this farm as compared with eighty-nine on the best farms, sixty-nine on the average and sixty-eight on the poorest. The number of cows on this farm are twelve while the best have twelve, the average seven and the poorest six.

The question of diversity on these farms is principally one of combining cash crops and stock. This farm has only nineteen work days on cash crops while the best have 118, the average sixty-three and the poorest thirty-nine. This farm has 299 work days on stock as compared with 336 on the best farms, 214 on the average and 198 on the poorest. This farmer devotes only about 5 per cent. of his time on cash crops. This is altogether too little.

The next heading, "Productiveness," shows that the returns from cows on this farm are better than the best. The average cattle unit produces $45; ten of them produce $450. On the best farms seven cattle units make as much while fourteen are required on the poorest farms. It requires only six cattle units on this farm to produce an equal amount. The gross income per stock work day is also larger on this farm than the average of the best.

The crop yield on this farm is about average, as ninety-eight acres produce as much as 100 average acres. On the best farms it requires eighty acres, while the poorest require 118 to produce an equal amount. The income per cash crop work day is very low on this farm because nine days were spent on growing three-fourths of an acre of potatoes, all of which were consumed on the farm. The average for the best farms is $6.14 per cash crop work day.

The last heading is called "Labor Efficiency." The expense, except operator's time per work day, is large on this farm. Considerable feed was purchased and labor expense is excessive. On the average the expense per day increases slightly as the per cent. of stock work increases. The gross income from a stock work day on this farm is twenty-one cents larger than this expense. The farmer and agent now know that for every productive work day on stock the operator could not have received for his time and profit more than twenty-one cents per day. The average is forty-one cents. The average receipts per cash crop work day are six times larger, being $2.41. This farmer did not spend any time, however, growing crops to sell.

There are 187 work days per man on this farm. The average farm has 198 work days per man while on the most successful farms there are 267. This is eighty more per man than on this farm. Dividing the labor income by the number of work days per man shows that the average farm operator received $1.20 per work day. The most successful farmers received $3.21 and the poorest minus $1.17. This farmer received only twenty-one cents per work day.

From the outline the cause of this farmer's failure is clear. The greatest weakness in his farm business is the lack of cash crops. This can be remedied by adding more crop acres to the present business either by renting or buying more land. If this is not practical and he does not wish to change farms he should probably reduce his stock to perhaps six cows and spend 100 or more work days on cash crops. The size of his business would be increased with profit and more crop acres would be the most desirable change. More work per man ought also to be obtained.

Another farm located in similar conditions is No. 2. The size is about the same but the diversity is much better, having only half as many cows but 139 days' work on cash crops. The quality of cows is just as good but the crop yield is not. The expenses are little less, not as much capital and less feed purchased. The hired help did not cost quite as much. This farmer made $1.34 per stock work day and $2.08 per crop work day. The work per man is about the same. This farmer made a labor income of $467 or $2.54 for each of his work days. His business compares in size and quality and work rate with the other farm, but because he diversified he made ten times as much money. The weakest point in this last farmer's business is the small size.

A little over 400 such survey records have been taken in Chemung County and returned to the farmers. To thus study a farm business, measure its success and find the remedies for improvement has been our principal work.

CHART I.

A Chemung County Hill Farm.

Area 114 acres.

Crops, 61; Woods, 10; Pasture, 40; Waste, 3.

Farm	$4,530
Tools	290
12 cows	480
5 other cattle	103
4 horses	400
1 brood sow	35
100 hens	75
Hay and feed	269
Cash	100
Total capital	$6,282

Crops.

	Acres.	Yield per acre.
Corn	10	25 bu.
Potatoes	¾	40 bu.
Rye	1½	12 bu.
Oats	10	15 bu.
Buckwheat	4	36 bu.
Hay	35	.7 ton
Apple (orchard)	4	13 bu.
Crop acres	61	

Receipts.

6 bu. apples, at 75c.	$5	
5 bu. buckwheat, at $1	5	
Strawberries	3	
Increase feed	62	
Market milk, at 3¼c.	1,000	
11 pigs, at $2	22	
Cattle increase	71	
Eggs	100	
Poultry sold	40	
Team work	40	
Total receipts		$1,348

Expenses.

Labor	$250	
Machinery	30	
Fence	16	
Feed	560	
Horseshoeing	20	
Seeds	40	
Taxes	42	
Miscellaneous	35	
Total expense		993
Income from labor and capital		$355
Interest on capital		314
Labor income		$41

CHART II.

COMPARISON OF CHEMUNG COUNTY HILL FARMS.

	Farm No. 1	Farm No. 2	Average 45 best farms	Average 270 farms	Average 61 poorest
Labor income	$467	$41	$858	$238	$—173
SIZE					
Man work days	295	318	454	277	237
Crop acres	69	61	89	69	68
Cows	5½	12	12	7	6
DIVERSITY					
Work days on cash crops and outside work	139	19	118	63	39
Work days on productive stock and crops fed	156	299	336	214	198
PRODUCTIVENESS					
Cows:					
Receipts per cattle unit	$70	$73	$65	$45	$32
Number of cattle units necessary to produce $450	6	6	7	10	14
Income per stock work day	$3.87	$4.12	$3.71	$2.94	$2.13
Crops:					
Acres necessary to produce as much as 100 average acres	115	99	80	100	118
Income per cash crop work day	$4.61	......	$6.14	$4.94	$4.03
LABOR EFFICIENCY					
Interest expense per work day	$0.73	$0.99	$0.77	$0.89	$1.06
Other expense except operator's time per work day	1.80	2.92	1.68	1.64	2.74
Total expense except operator's time per work day	2.53	3.91	2.45	2.53	3.17
Income per stock work day minus expense	1.34	.21	1.26	.41	—1.04
Income per cash crop work day minus expense	2.08	......	3.69	2.41	.86
Number men	1.6	1.7	1.7	1.4	1.6
Work days per man	184	187	267	198	148
Farm operator's profits and pay per work day	$2.54	$0.21	$3.21	$1.20	$—1.17

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 95

AGRICULTURAL CREDIT

STATE OF NEW YORK,
Executive Chamber,
Albany, March 3, 1914.

Hon. Calvin J. Huson, Commissioner of Agriculture, Albany, N. Y.:

Dear Sir.— To carry out the broad plans for better agricultural credit formulated in my message to the Legislature, will require the active and earnest co-operation of the Department of Agriculture and of the farmers of New York.

I urge upon you the necessity of carrying our program to the farmers of the State and enlisting their assistance in the campaign for rural betterment.

It might be wise to send this message with your regular bulletins in order to give the farmers an accurate idea of the plan for better agricultural credit.

Sincerely,
MARTIN H. GLYNN,
Governor.

STATE OF NEW YORK — EXECUTIVE CHAMBER
ALBANY, *March* 2, 1914

TO THE LEGISLATURE:

The Democratic State platform urges a better system of agricultural credit for this State, as does the Progressive State platform, while the Republican State platform stands for the general improvement of our agricultural conditions.

The National platforms of the Democratic, Republican and Progressive parties urge an improved system of agricultural credit for the nation.

The farms of New York State, according to the last United States census, are mortgaged for approximately $100,000,000.

I respectfully suggest to the Legislature that it can institute a system of agricultural credit which will save the farmers of New York $24,000,000 if present mortgages are converted into ten-year amortization loans, and $82,000,000 if converted into fifty-year amortization loans.

By amortization loans I mean that system of loans now used in Europe, under which the farmers of Germany, France, Great Britain and Italy borrow money on their land and pay it back in instalments at easy rates of interest.

For a thousand dollar loan at six per cent. for fifty years, a German farmer pays $63.44 annually, or only $3.44 over the interest. But these small additional sums, insignificant to an American farmer, wipe out the debt.

For a loan of $1,000 at six per cent. for ten years an American farmer pays $600 interest and the principal at the end of the term, or $1,600 all told. If the European system were available he would pay $135.86 each year. During the ten years he would pay only $1,358.68 or $241.32 less than under our present system; yet his debt would be completely paid.

If New York's mortgage indebtedness of $100,000,000 were converted under the European system into ten-year loans the farmers of the State would be saved $24,132,000; if converted into fifty-year loans they would be saved $82,800,000.

Under this system of amortization loans, the European farmer pays a small sum each year in addition to his interest, and by continuing these small payments for periods ranging from ten to fifty years, is able to pay off the principal of his loan with little difficulty. Instead of having a large indebtedness to meet at the maturity of his loan and running the risk of foreclosure through hard times or failure of crops, he pays in instalments and has no greater burden to bear at the end than at the beginning of his loan.

Not only will the introduction of this system reduce the weight of existing mortgages, but by placing capital within easy reach of New York's farmers it will have the effect of stimulating the agriculture of the State in all its branches.

It is evident to every observer that some such stimulation is necessary.

In the last ten years the urban population of New York increased more than twenty-five per cent. But in the country districts the increase was less than one per cent.

It is not surprising therefore that during this same period the number of cultivated farms decreased five per cent.

While the nation as a whole increased the area of its improved farms fifteen per cent., the area of New York's improved farms decreased four and eight-tenths per cent.

Neighboring states also lost in farm acreage, but New York lost a greater area of cultivated land than Pennsylvania and New Jersey combined.

A loss in the area of food-producing land is a serious problem for any State.

It is a matter which demands the attention of every class and division of the population, of the merchant no less than the farmer, of the city man no less than those who till the soil. And it is a problem which calls especially for broad and statesmanly action by those charged with direction and leadership in governmental activities.

I have already called the Legislature's attention to the measures that the State should adopt to provide its farmers with facilities for short-time loans and a better marketing system.

Short-time loans, however, will not enable a farmer to make extensive improvements on his land. They will not permit a prospective farmer to secure a farm.

If New York would stem the tide from the country to the city, if it would halt the decrease in the acreage of its farms, it must provide a system of credit which will enable the farmer to secure capital at a low rate of interest and for a considerable period of time.

The value of the credit system I suggest must be measured by the needs of the man who is struggling to maintain a foothold on the land. It is not a system to help farmers who do not need help. They can help themselves. It is a system to assist farmers who need assistance. It is a system to help small holders of land acquire more land. It is a system to help the man with a little money secure a farm. The way to make a people collectively the masters of the world, is to make them individually masters of a few feet of earth.

The easiest way to possession of land is through the long time loan.

The long time loan gives the advantage of compound interest to the debtor instead of the creditor.

It enables the borrower to pay his principal on the instalment plan so that the burden is scarcely felt. It is a forced system of

saving which, drop by drop, will wear away the disheartening rock of the farmers' indebtedness.

It makes the farmer the master instead of the slave of his mortgage.

There is nothing revolutionary or strange in the system of agricultural credit I propose. It is simply a plan for affording the farmers of New York the credit facilities enjoyed by the farmers of other countries.

We have provided America's industries with a credit system suited to their needs. Surely New York's agriculture is entitled to a credit system which meets its necessities.

There is no politics in what I suggest. All three parties, represented in the Legislature, are committed to it by their national platforms; all three committed to it by their State platforms, two of them specifically and the third generally.

There is no trace of class legislation in what I suggest. A plan which benefits the agriculture of the State must benefit commerce as well as agriculture, must help the man in the city no less than the man in the country; must assist those who consume food as well as those who produce it.

France is using long time loans to enable its people to acquire homesteads. The young men of France after they have served their time in the French army find these long time loans of great assistance in making a fresh start.

Ireland is solving the problem of absentee landlordism and of tenant congestion by a system of long time loans. Since this plan was put into operation the English government has purchased and resold to small holders 8,000,000 acres, valued at $450,000,000.

The government has purchased the land from the original owners and transferred title to the small purchasers on loans and mortgages spread over an average period of sixty-two years. The purchaser pays three per cent. interest on the purchase price and one-half per cent. to pay off the principal. At the end of sixty-two years the land will be owned free and clear by the purchaser without further payment. The one-half per cent. per year is sufficient to amortize this long time loan.

What is most significant there have been practically no defaults in payment or foreclosures on mortgages amounting to $450,000,000, during the twelve years in which this system has been in operation.

Germany has used the long time loan to such good advantage that the short time loan is practically unknown in agricultural mortgages. Germany's farmers have been able to increase the efficiency and output of their farms by the liberal use of capital, made available for other purposes by long time loans; so that at present Germany raises twice as much per acre as the United States on average poorer soil.

For instance, from 1900 to 1909, the average yield of potatoes per acre was 91.4 bushels in the United States and 200 bushels in Germany; of rye, 15.7 bushels in the United States and 25.6 in Germany; of wheat, 14.1 in the United States and 28.9 in Germany; of oats, 29.3 in the United States and 50.7 in Germany.

I urge permissive legislation to allow the formation of land banks in this State.

There are two ways to do this. One is by the establishment of a large central bank issuing debentures to be secured by mortgages placed by savings and loan associations acting as feeders for the central bank. In this system existing associations together with savings and loan associations to be organized among farmers would be stockholders in the central bank. The members of these associations would be allowed the privilege of borrowing money on the long time amortization plan. This system is favored by leading members of the State Agricultural Society and of the State Grange as well as by the Committee on Rural Credit appointed by the Commission to revise the banking laws.

The other system authorizes the formation of land banks as stock institutions by the subscription of private capital. This system is advocated by many leading agriculturists and financial experts who have devoted much time to the study of agricultural credit abroad and to our need for it at home.

Bills advocating each of these systems will be offered for the consideration of the Legislature and I urge the passage of either or both of these bills.

Experience, necessity and self-evident economy all urge the introduction of a system of long time loans, based upon the amortization plan. It is not for me to impose my views as to the details of that system upon the Legislature, but there are certain basic principles underlying all systems of long time amortization loans which must be observed in any successful plan.

In the first place there must be some association or corporation to make these loans. Individuals cannot wait fifty years for the return of their money. To make sure that the land bank thus organized shall devote the necessary attention to agriculture there should be a provision in the law creating it, providing that part of its mortgages should be made on farm land.

Finally, the law should incorporate a provision which will give the borrower the right to extinguish his entire debt at any time he desires and is able to do so.

The United States has achieved commercial supremacy largely because its commerce has been equipped with an admirable system of credit. In its building and loan associations, it has proved its understanding of, and capacity for co-operative credit. There is every reason to believe that if this State turns its attention to a proper system of agricultural credit, it will obtain satisfactory results.

Our agricultural problem may not be as serious as that of Europe, but it is grave enough to demand intelligent attention.

Whereas, in 1899, 658,652 acres of New York's farm lands were devoted to raising corn, in 1909 only 512,442 acres were so employed.

Land devoted to raising oats decreased from 1,329,753 to 1,302,508 acres.

Wheat acreage decreased from 557,736 to 289,130 acres.

Buckwheat acreage decreased from 289,862 to 286,276 acres.

Hay and forage acreage decreased from 5,154,965 to 5,043,373 acres.

Potato acreage decreased from 395,640 to 394,319 acres.

During a decade in which the population of New York increased 25 per cent. the farm lands devoted to crops decreased as follows:

Corn, 2 per cent.; oats, 2 per cent.; wheat, 48 per cent.; barley, 28 per cent.; buckwheat, 1 per cent.; rye, 26 per cent.; hay and forage, 2 per cent.; potatoes, three-tenths of 1 per cent.

Inasmuch as the decrease in the acreage of improved land occurred in the State's most important crop, hay and forage, as well as in cereals and small fruits, it is evident that there has been no equivalent increase in other departments of agriculture to compensate for these losses.

Those who look for the causes of the high cost of living will find a partial explanation in these figures. With more people to feed, we are devoting less land to feeding them. Instead of turning our surplus population back from the cities to the land, the cities are draining already depopulated farms.

If these conditions are permitted to continue New York must eventually face a situation where it will not only cease contributing to the nation's exports, but will be compelled to go outside for the food that its own people require.

The State has already felt the effect of the lessening supply of food in the prices which the consumer is now obliged to pay.

Since 1900 the price of potatoes has increased 56 per cent.; flour has increased 35 per cent.; eggs have increased 41 per cent.; cornmeal has increased 60 per cent.; butter has increased 40 per cent.

The law of supply and demand has inexorably enforced itself.

From the facts I have called to your attention, the need, the advantage and the practicability of the long time agricultural loans should be evident. The system which has been successful in Europe will be successful here if its introduction is accompanied by wisdom and foresight.

The proposition is as simple as it is far-reaching. We face a situation where we must turn our attention for a time from the industries which have drained our farms to the farms which must feed our industries.

We must provide the means to assist the movement from the city back to the farm, which all thinking men foresee, by providing capital with which this transformation may be achieved.

It is not a problem that can be solved by fads or faddists. It is one which demands and is well worthy of the earnest and patriotic attention of every man who would keep this country from an economic crisis.

We know that our farmers are industrious and intelligent and that any plan which requires only industry and intelligence for its success may be safely entrusted to their hands.

The Legislature of New York has the opportunity to benefit not this State alone, but every State in the Union by giving the farmers of New York a chance to demonstrate that their fertile acres afford a safe and satisfactory field for investment.

MARTIN H. GLYNN

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 96

NEED FOR CO-OPERATIVE EFFORT

STATE OF NEW YORK,
Executive Chamber,
Albany, March 5, 1914.

Hon. Calvin J. Huson, Commissioner of Agriculture, Albany, N. Y.:

Dear Sir.— If the State is to find in co-operation that aid to agriculture which it has proved abroad, it must command an intelligent interest of every farmer in the State.

The message to the Legislature which I enclose indicates the lines along which the State will endeavor to stimulate this co-operation.

I trust that you will take the necessary steps to get in touch with every rural community in order that, from the very start, the campaign for better marketing facilities may command the assistance of every farmer.

Sincerely,
MARTIN H. GLYNN,
Governor.

State of New York — Executive Chamber,
Albany, *February* 10, 1914.

To the Legislature:

There is no proposition better deserving of the earnest and careful attention of the Legislature than the development of the State's agriculture and the extension of its agricultural facilities.

The present condition of agriculture in this State is far from satisfactory. In the last ten years the urban population of New York has increased twenty-five per cent., while the increase in rural population has been less than one per cent.

Where in 1900 New York had 226,720 improved farms, in 1910 it had only 215,557, a decrease of five per cent.; where in 1900 there were 15,600,000 acres of land under cultivation, in 1910 there were but 14,888,000 acres. In other words, so far as agriculture is concerned, New York is not gaining the ground that is to be desired.

Because there has been a decrease in the amount of land under cultivation, New York's food supply has remained practically stationary, while its population has steadily increased; but in addition to this fact the cost of bringing the farmer's products to the consumer's table is greater than ever before.

For every dollar that the consumer of New York pays for his food the farmer receives but thirty-five cents; sixty-five per cent. of every dollar paid for food represents merely the cost of distribution.

With twentieth century facilities at hand, New York is still in the seventeenth century so far as its system of marketing food is concerned. The farmer is a manufacturer, but he operates at present under a system which would drive any other manufacturer into bankruptcy.

The farmer now is a manufacturer who buys his raw products at retail and sells the finished product at wholesale. Instead of dealing as directly as possible with the man to whom he sells his products he turns them over at wholesale prices to commission merchants and large buyers, or else pays necessarily extravagant freight rates on small shipments of food.

So unscientific is the present system of food distribution that in some cases after the farmer's products have reached the centers of distribution they travel for miles in a roundabout fashion where they should properly go but a stone's throw.

In many cases farmers' products are shipped to some distant center only to return to a neighboring village in a few days.

In this transaction there is always a loss of quality and the extra expense of transportation and profit which the ultimate consumer must pay.

The reason for these disturbing facts is apparent. The farmer at present deals as an individual; because his time is taken up with production he has no time or chance to attend to the numerous phases of distribution. And so long as this is true the middleman is not to blame, because he merely takes conditions as he finds them.

The farmer shipping individually to distant markets necessarily pays the highest rate of transportation and does not get as good service as is accorded carload shipments. His products are handled with greater expense in the city and naturally bring the producer smaller returns than large shipments. By his failure to supply the State markets in a satisfactory fashion, the farmer of New York leaves his principal market open to the products of the world.

The better organized industries of other States and other countries have already succeeded in establishing a regular trade in our own local markets, in many cases for goods which are of inferior quality to the product of the neighboring New York farms.

There is no need for me to call your attention to the importance of finding a suitable remedy for present conditions. The food supply of ten million people is too important to be managed without skill or forethought.

I do not believe there is any pressing need for new legislation in the matter. New York already has upon its statute books laws which, if properly applied, would stop the present waste and mismanagement.

In the Co-operative Marketing Law of last year and the Credit Union Law, the State has the means for enabling the farmer to buy at wholesale and sell at retail. A few farming communities have already taken advantage of these laws and discovered that they met the farmers' problems, but through the State generally, because of indifference and a failure to appreciate what these laws mean, there has been failure to take advantage of them.

This has been the history of agricultural legislation throughout the world. In Ireland, under Sir Horace Plunkett, after a co-operative law had been passed, it took fifty meetings to organize the first co-operative society. As a result the government undertook to send out organizers to form these societies and to educate farmers generally in the purposes and advantages of the co-operative law. To-day there are in Ireland a hundred thousand farmers engaged in various forms of co-operative effort and the total business transactions of these various associations amount annually to some fifteen million dollars.

In France and in Germany those who secured the enactment of co-operative laws discovered that those they sought to benefit were slow in appreciating what this new legislation meant. It was not until the government had undertaken a campaign of education and organization that the co-operative societies were formed which now are the very basis of agricultural progress in Europe.

Massachusetts enacted a Credit Union Law for its farmers in 1909 and in 1911 the following report was submitted by a Committee who had it in charge:

> "Your Committee deplores the fact that the provision of Chapter 419 of the Acts of 1909, being 'an act to authorize the co-operation of credit unions,' has not had more general advantage taken of it."

After two years of effort Massachusetts discovered that agricultural legislation without proper organization and education was practically useless.

What New York most needs, therefore, is not legislation but organization. It already has the necessary ground work of laws. It must now make these laws walk.

The farmer either has no time to form co-operative societies himself or he lacks the necessary initiative and must be assisted by capable organizers sent out by the State.

In the few instances where farming communities in New York have organized co-operative societies under the present laws, the results have been most satisfactory.

A co-operative association in the Hudson Valley, incorporated something over a year ago has actually reduced the prices of many farming supplies 50 per cent. It was able to reduce the price of oats for instance, from sixty cents a bushel to thirty-eight cents for its members; it was able to reduce the price of lime and sulphur solution from nine to five dollars a barrel, and it is able, with profit, to market the produce of its members at three per cent. of the gross price.

A co-operative company organized last year in one of our large industrial cities has applied the benefits of the law to the consumer. It has for its directors men who work in the shops of the city during the day and at night are the directors and store clerks in the company's co-operative store. They have been able to make a reduction of 18 per cent. in the price of necessities of their members, and at the same time have paid their stockholders six per cent., the limit permitted in a co-operative company.

The Jewish Agricultural and Industrial Society has established co-operative societies under the present laws and the results have been most satisfactory and beneficial.

From these facts it would appear that further legislation is unnecessary, but that what the State needs is a campaign of organization which will bring to every farming community in the State the benefits which at present only a few have had the forethought to seize.

I therefore recommend that the Legislature appropriate the necessary funds to conduct such a campaign.

The Legislature should secure for the State the services of men who will make it their sole duty to go through the State explaining these co-operative laws and assuming the responsibility for creating and organizing credit unions and co-operative marketing societies.

These men should make it their business to organize markets and shipping stations under the control of local co-operative marketing associations. One large receiving center in cities and towns of medium size will answer all the purposes of a packing, grading, shipping and marketing station.

Here the produce will be delivered by the neighboring farmer and credited to his account. The goods will then be graded, packed and labeled. Pains will be taken to supply first of all the demands of the local town. The balance can then be shipped in carload lots to the centers of best demand. One central station equipped with cold storage facilities can accommodate the surplus products of several smaller stations.

These various associations throughout the State can organize a selling agency in the city of New York which will keep itself advised on the condition of domestic and foreign markets and be in a position to direct the shipments to centers where the demand is strongest and where the best prices prevail.

From the experience of other states and countries, I am certain that the farmers of New York will respond to any invitation to co-operate which is made in the way I suggest. Furthermore when New York's farmers realize that such a movement is definitely under way, no single community will handicap itself by permitting other communities to enjoy a monopoly of scientific credit and proper marketing facilities. In Minnesota 600 co-operative creameries were organized in ten years, with a total membership of 50,000 farmers. In California more than 20,000 fruit growers are co-operating and a third of the entire fruit business of that State is handled co-operatively.

The Commissioner of Agriculture informs me that at least $25,000 and not more than $50,000 would be sufficient to under-take a campaign of organization and education. Compared to the tremendous saving to the producers and consumers of the State which is being sought, the sum is trifling.

The results we desire cannot be achieved in a day. We know, however, that they can be achieved by diligence and earnest effort and we should take the means which experience and reason alike convince us to be the best.

The United States already leads the world in co-operative insurance. There is no reason why it should not strive for similar leadership in co-operative agriculture.

At a further date I shall suggest to the Legislature certain additions to the agricultural and banking laws intended to enable those not already farmers to purchase farm land on long time loans and to assist present farmers to extend their operations. But before we proceed to new laws we should be sure that we are making the best use of the laws we already have.

MARTIN H. GLYNN.

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 97

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Diseases of the Honey Bee and Treatment

DISEASES OF BEES

EUROPEAN FOUL BROOD

Prevalence

The prevailing bee disease in this State is supposed to have originated in Schoharie county, about the year 1895, and spread with such rapidity as to cause fearful havoc among the bees of that county, completely destroying many large apiaries. The infection has also extended to adjoining counties. It has been controlled and in some cases suppressed in these counties, but it now appears from time to time in several parts of the State. The combined energy and perseverance of the inspectors and of all beekeepers in the infected districts will be necessary to abate this scourge.

Cause

The disease is caused by the presence of a specific germ known at present as *Bacillus pluton,* according to the best authority, which is present in this disease, and which develops in the larva, usually resulting in death in the larval stage.

Appearance

The healthy larva are of a pearly whiteness and lie curled around the bottom of the cells, but when attacked with this disease they change to a yellowish tint and occasionally show a small black dot, or a bright yellow spot on the upper side; dying, they settle down to the lower side of the cells and continue to grow darker in color until brown or black, emitting a sickening odor.

The Bacillus and Its Spores

Later in the life history of the bacilli, spores are produced. These form the resting stage of the bacilli and may be compared to the seed of higher plants that are ready to germinate as soon as they are placed in suitable media. These spores are innumerable and cover to a greater or less extent the combs, frames and every portion of the inside of the hive, including honey and pollen; therefore, if any honey, comb, etc., from diseased colonies, come in contact with same in healthy colonies, they would probably contract the disease. There is also great danger of contamination through robbing.

Caution

It is hoped that beekeepers will realize the necessity of exercising great care in dealing with this disease. It should be as vigorously treated as a case of smallpox or yellow fever in your own family, and it requires as thorough disinfection. Carelessness or negligence in handling or treating will be sure to cause the spread of the disease in your own and neighboring apiaries. Do not tolerate any weak colonies in your own apiary, as they are liable to be robbed out when honey is scarce in the fields. If they are diseased, the best and safest way will be to kill the few bees remaining, at evening, by brim stoning and afterward burning the combs, frames, quilts, bees, etc. Dispose of all honey, combs, brood, etc., immediately after treating diseased colonies, or any that may have died, as you are never safe with any of these standing around. "Delays are dangerous," especially so in this case.

Management

This disease is more pronounced early in the season when the bees are breeding heavily, than later, when it frequently abates to some extent. The removal of the queen from a diseased colony is always a check to the disease and can often be used to advantage in handling it.

Always treat the disease at evening or about sundown, seeing that no stray bees enter healthy colonies. If you have good hives they may be saved and used again, but in no case try to save any of the contents unless there is much honey or wax, which can be saved by cutting out and boiling thoroughly for one hour. It will be well to add a little water to the honey to prevent burning. Do all handling of honey, etc., under cover, where no bees can gain access to it. Do not buy any honey for feeding, as there is great danger of getting that which is infected; sugar feed is safest.

Do not exchange combs or supers from hive to hive in apiaries affected with the disease.

Prompt Action Essential

It is expected that you will treat promptly all stocks marked by the inspector as diseased, and any others which may show the disease later on, that he may not be compelled to resort to more stringent measures.

Treatment

Good results have been attained in the past by treatments here given, and many badly diseased apiaries cured, and the owners have a feeling of security and satisfaction heretofore not enjoyed by them. *The Italian race of bees is regarded more nearly immune than other races from this disease,* and it is recommended that all apiaries in or dangerously near diseased territory be Italianized.

The best time to affect a cure is during a honey flow at any time after the commencement of white clover bloom.

If stocks are weak to medium, unite a sufficient number to make them as strong as a good prime swarm; and where this is done, it might be advisable to confine the bees to the hive or box in which they are shaken, and place it in a cool, dark room or cellar for two or three days as a precautionary measure against desertion.

In any of the several treatments herein given, the use of foundation starters in the primary treatment is optional. When rehiving the bees they may, if preferred, be placed upon starters instead of full sheets of foundation.

In rendering wax from diseased colonies never use a sun extractor, but subject to heat for one hour or more over the stove.

Some recommend as quite important the introduction of a new queen at the time the bees are removed from the old comb, caging the queen for several days. Be sure that she is reared in a healthy colony, away from all infection, and she should be of the Italian race.

Treatment Number One

Shake off or drum out all the bees of the diseased colony, place them in empty hives on the old stand for three or four days then re-hive them in new or disinfected old hives.

It is well and perhaps best to use frames containing foundation starters at the first, and full sheets at the last shaking, melting up the starters, by boiling into wax. The old hive may be used without disinfection if desired, at the first shaking, simply removing all of the combs, brushing off all bees and placing in the old hive a starter or sheet of foundation partially drawn or worked out, to hold or pacify the bees, removing same quickly to prevent removal of honey, after the bees commence work on others. Some do not shake these again unless disease shows up later. In treating colonies it is always safest to shade them for several days, from the direct rays of the sun, and to ventilate them well, as the bees will be less inclined to abscond. If desired, a queen excluder may be placed on the hive to retain the queen. It is also well to have the queens clipped.

Fair success has been obtained by shaking but once, but should the disease reappear it will be necessary to repeat the operation.

When diseased colonies have a large amount of brood at time of treatment, it may be placed together in a hive after the bees are shaken off, and set over a weaker diseased colony, or several hives of this brood may be tiered up over one colony and shaken later, when the brood has mainly hatched — say from ten days to two weeks. Care must be taken, however, that no robbing from these combs occurs, and the entrance should be well contracted.

Treatment Number Two

Colonies that are found to be diseased too late in the season to treat by the aforesaid method, may, after brood rearing has ceased, be shaken off of their combs on to full combs of honey that are positively free from all infection.

If it is desired to disinfect the old hive it may be done in the following manner:

Paint the entire inner surface of the hive with kerosene oil, fire the same and allow it to burn until the surface is slightly blackened, then throw half a cup of water into the burning hive and quickly put a cover on, which will instantly extinguish the flames.

AMERICAN FOUL BROOD

This disease differs materially from the foregoing, being less malignant and more easily controlled; inasmuch as it spreads less rapidly, however, it is not to be trifled with, as it is also contagious and devastating when neglected. It exists in some sections of this State, also at various points throughout the United States and Canada.

Bacillus alvei is not found in this disease, but instead a bacterium recently named *Bacillus larvae.* The dead larva are at first of a light chocolate color, but gradually turn to a very dark brown, forming a thin scale on the lower side of the cell which is very tenacious and seldom removed by the bees. Before the dead larva dry out they consist of a viscous or ropy fluid which may be drawn out of the cell several inches without breaking. There is also a rank odor present in the hive at this stage of the disease.

In this disease fewer of the larva die before the cells are capped. The capping of these cells when containing dead larva are more or less sunken, of a darker shade and often perforated.

In either form of foul brood, the capped cells are usually scattering presenting a mottled appearance of the comb, which is a striking characteristic of these diseases, on opening colonies in which they are well advanced. At this stage the adult bees are also rather listless and apparently discouraged.

The same treatment and management is recommended as that given for European foul brood. Treatment number one should be followed in this disease.

PICKLED BROOD

This is a peculiar disease of the larva which causes death at about the time of capping of same; sometimes just before.

At this time they are of a light brown color, and have a distended, dropsical appearance.

The skin is rather tough and filled with a watery fluid. The larva usually lie on their backs and lengthwise of the cells, both ends sharply pointed, sometimes having black heads. There is but little if any odor in this disease. The cause is yet undetermined. It is not considered a contagious disease, nor very serious in its effects. In ordinary cases, the bees readily clean out the dead larva a little later.

PALSY OR PARALYSIS

This is a disease of the adult bees only. Often only a few scattering colonies in an apiary will be affected by it, but there are cases on record where whole apiaries have been thus affected. As there is a constant drain on the adult bees, there is but little if any profit from such colonies for that season.

The diseased bees present a shiny or greasy appearance, as most of the hair on the thorax has disappeared, having probably been removed by other bees in biting and teasing them. Their abdomens are often greatly distended. They also often shake and stagger about, finally leaving the hive, either of their own accord, or through expulsion by the healthy workers of the colony. They drop at the hive entrance, sometimes by hundreds, some crawling about over the ground until they finally disappear.

The cause of this disease is unknown.

Many remedies have been tried and failed. Perhaps the best one is to remove the old queen and substitute a healthy one.

NO NAME DISEASE

The writer has observed in several cases, large numbers of young bees deserting the old colony, crawling about and dying on the ground around the hives, but was unable to find a cause, as the colony contained honey and appeared normal in every other respect, hence cause and remedy unknown.

PROVISIONS OF THE AGRICULTURAL LAW RELATING TO DISEASE AMONG BEES

§ 300. *The Prevention of Disease Among Bees.*— No person shall keep in his apiary any colony of bees affected with a contagious malady known as foul brood or black brood; and every beekeeper when he becomes aware of the existence of either of such diseases among his bees, shall immediately notify the commissioner of agriculture of the existence of such disease.

§ 301. *Defining Honey.*— The terms "honey," "liquid or extracted honey," "strained honey," or "pure honey," as used in this article shall mean the nectar of flowers that has been transformed by, and is the natural product of the honey-bee, taken from the honeycomb and marketed in a liquid, candied or granulated condition.

§ 302. *Relative to Selling a Commodity in Imitation or Semblance of honey.*— No person or persons shall sell, keep for sale, expose or offer for sale, any article or product in imitation or semblance of honey branded as "honey," "liquid or extracted honey," "strained honey" or "pure honey" which is not pure honey. No person or persons, firm, association, company or corporation, shall manufacture, sell, expose or offer for sale any compound or mixture branded or labeled as and for honey which shall be made up of honey mixed with any other substance or ingredient. There may be printed on the package containing such compound or mixture a statement giving the ingredients of which it is made; if honey is one of such ingredients it shall be so stated in the same size type as are the other ingredients, but it shall not be sold, exposed for sale, or offered for sale as honey; nor shall such compound or mixture be branded or labeled with the word "honey" in any form other than as herein provided; nor shall any product in semblance of honey, whether a mixture or not, be sold, exposed or offered for sale as honey, or branded or labeled with the word "honey," unless such article is pure honey.

§ 303. *Duties of the Commissioner.*— The commissioner of agriculture shall immediately upon receiving notice of the existence of foul brood or black brood among the bees in any locality, send some competent person or persons to examine the apiary or apiaries reported to him as being affected, and all the other apiaries in the immediate locality of the apiary or apiaries so reported; if foul brood or black brood is found to exist in them, the person or persons so sent by the commissioner of agriculture shall give the owners or caretakers of the diseased apiary or apiaries full instructions how to treat said cases. The commissioner of agriculture shall cause said apiary or apiaries to be visited from time to time as he may deem best and if, after proper treatment, the said bees shall not be cured of the diseases known as foul brood or black brood then he may cause the same to be destroyed in such manner as may be necessary to prevent the spread of the said diseases. For the purpose of enforcing this article the commissioner of agriculture, his agents, employees, appointees or counsel, shall have access, ingress and egress to all places where bees or honey or appliances used in apiaries may be, which it is believed are in any way affected with the said disease of foul brood or black brood or where it is believed any commodity is offered or exposed for sale in violation of the provisions of this article. No owner or caretaker of a diseased apiary, honey or appliances shall sell, barter or give away any bees, honey or appliances from said diseased apiary, which shall expose other bees to the danger of said diseases, nor refuse to allow the said commissioner of agriculture, or the person or persons appointed by him to inspect said apiary honey, or appliances, and do such things as the said commissioner of agriculture or the person or persons appointed by him shall deem necessary for the eradication of said diseases. Any person who disregards or violates any of the provisions of this section is guilty of a misdemeanor and shall be punished by a fine of not less than thirty dollars nor more than one hundred dollars, or by imprisonment in the county jail for not less than one month nor more than two months, or by both fine and imprisonment.

SPRAYING FRUIT TREES WHEN IN BLOOM

This question must be considered from two standpoints: First: What is the effect on the fruit when spraying is made with arsenical poisons?

The New York Agricultural Experiment Station in the season of 1900 made some careful investigations in cooperation with the Cornell Experiment Station. A description of the experiments and their results was given in Bulletin No. 196. The results show that spraying in bloom tends to thin the fruit if the treatment is given soon after the buds open. When trees had a great abundance of blossoms, spraying but once during the blooming season lessened the yield somewhat. By spraying repeatedly during the blooming season, thus hitting the blossoms as they opened from day to day, the blossoms were nearly all destroyed, and as a consequence scarcely any fruit set.

Second: What is the effect on honey bees when they visit trees that have been sprayed with arsenical poisons?

The only recorded experiments on this question show that careful investigation was made by Professor Webster at the Experiment Station a[illegible] Wooster, Ohio. These experiments were reported in Ohio Bulletin No. 68. In summing up the matter Professor Webster says that he can draw no other conclusion from the results of his experiments than that the bees are liable to be poisoned if the bloom of fruit trees is sprayed; the liability increasing in proportion as the weather is favorable for the activity of the bees, and that all bloom must have fallen from the trees before the danger will have ceased.

The best authorities in this State are all agreed that there is little need of spraying when trees are in full bloom, and as long as there seems to be some risk to bees, the law prohibiting such spraying is generally approved.

The following is a copy of the law in the State of New York: Section 1757. Penal Law.

Spraying Fruit Trees with Poison.— Any person who will spray with, or apply in any way poison or any poisonous substance, to fruit trees while the same are in blossom, is guilty of a misdemeanor, punishable by a fine of not less than ten dollars ($10) or more than fifty dollars ($50) for each offense.

AGENTS — BEE INSPECTION WORK

Appointed under the provisions of sections 300, 301, 302 and 303 of the Agricultural Law.

First Division

Comprising the counties of Albany, Clinton, Columbia, Dutchess, Essex, Greene, New York, Putnam, Rensselaer, Saratoga, Schenectady, Warren, Washington, Westchester. Wheeler D. Wright, agent, Altamont, N. Y.

Second Division

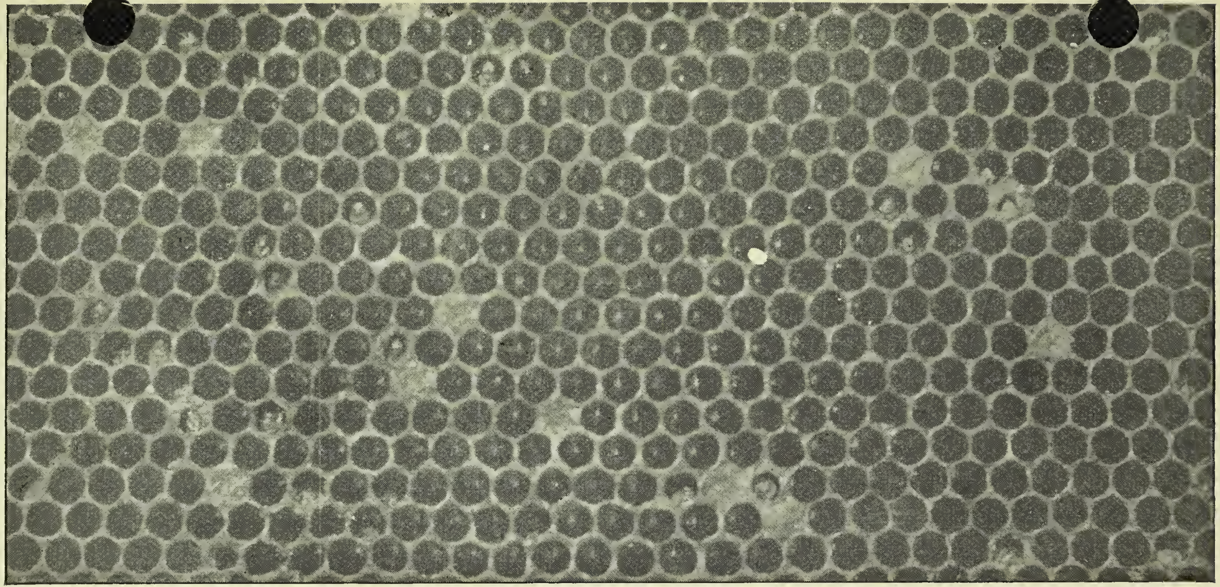
Broome, Chemung, Chenango, Delaware, Kings, Nassau, Orange, Otsego, Queens, Richmond, Rockland, Schoharie, Suffolk, Sullivan, Tioga, Tompkins, Ulster. Noah D. West, agent, Middleburg, N. Y.

Third Division

Allegany, Cattaraugus, Chautauqua, Cortland, Fulton, Hamilton, Herkimer, Livingston, Madison, Montgomery, Oneida, Schuyler, Steuben, Wyoming, Yates. Charles Stewart, agent, Sammonsville, N. Y.

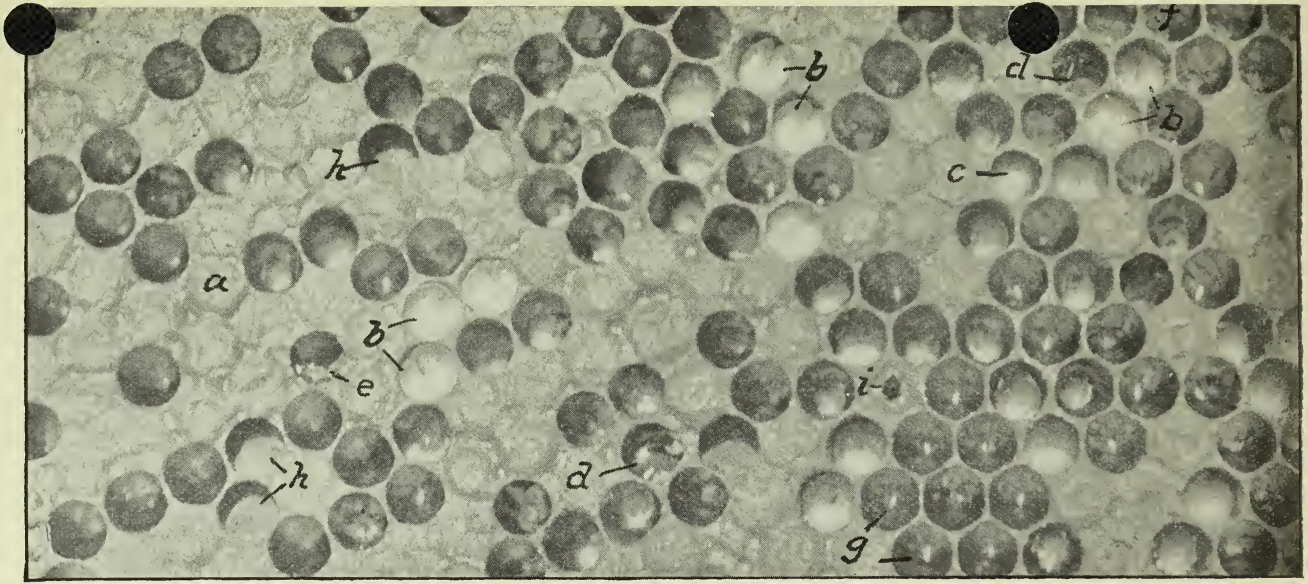
Fourth Division

Cayuga, Erie, Franklin, Genesee, Jefferson, Lewis, Monroe, Niagara, Onondaga, Ontario, Orleans, Oswego, Seneca, St. Lawrence, Wayne. Mortimer Stevens, Pennellville, N. Y.



Pickled Brood. Note the pointed larvae in many of the cells, which is a characteristic of this disease.

a. Healthy capped brood.
b. Healthy larva.
c. Larva soon after death, white, but distorted.
d. Dead larva, of semi-fluid consistency, brown in color, occasionally slightly ropy.
e. Dried dead larva, dark brown color.
f. Dried scales from dead larva, light yellow color.
g. Eggs recently laid by queen.
h. Cells of pollen.
i. Diseased capped cells, cappings perforated.



European Foul Brood (from worker brood, much enlarged). In the sample from which this photo was taken, the disease was not far advanced.

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STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 98

ARTICLE 15 OF THE AGRICULTURAL LAW
Inspection and Sale of Seeds

Section 340. Inspection and sale of seeds.
341. Samples, publication of results of examination.

§ 340. **Inspection and sale of seeds.** Within the meaning of this article "agricultural seeds" are defined as the seeds of alfalfa, Canadian blue grass, Kentucky blue grass, alsike clover, crimson clover, red clover, white clover, vetch, orchard grass, rape, red top, and timothy which are to be used for sowing or seeding purposes. No person, firm or corporation shall sell, offer, expose or have in his possession for sale for the purpose of seeding, any seeds of grasses or clovers, of the kind known as agricultural seeds containing in excess of three per centum by weight of foul or foreign seeds, unless every receptacle, package, sack or bag containing such seeds is plainly marked or labeled with the per centum of such foul or foreign seeds contained therein. (As amended by chapter 59 of the Laws of 1914.)

§ 341. **Samples, publication of results of examination.** The commissioner of agriculture or his duly authorized representatives shall take samples of seed in triplicate in the presence of at least one witness and in the presence of such witness shall seal such samples and shall at the time of taking tender, and if accepted, deliver to the person apparently in charge one of such samples; one of the other samples the commissioner of agriculture shall cause to be analyzed. The director of the New York agricultural experiment station shall analyze or cause to be analyzed such samples of seeds taken under the provisions of this article as shall be submitted to him for that purpose by the commissioner of agriculture and shall report such analysis to the commissioner of agriculture, and for this purpose the New York agricultural experiment station may employ experts and incur such expenses as may be necessary to comply with the requirements of this article. The result of the analysis of the sample or samples so procured, together with such additional information as circumstances advise, shall be published in reports or bulletins from time to time.

PENALTIES

Section 52 of the Agricultural Law relates to penalties and is as follows:

§ 52. **Penalties.**— Every person violating any of the provisions of this chapter, shall forfeit to the people of the state of New York the sum of not less than fifty dollars nor more than one hundred dollars for the first violation and not less than one hundred dollars nor more than two hundred dollars for the second and each subsequent violation. When such violation consists of the manufacture or production of any prohibited article, each day during which or any part of which such manufacture or production is carried on or continued, shall be deemed a separate violation. When the violation consists of the sale, or the offering or exposing for sale or exchange of any prohibited article or substance, the sale of each one of several packages shall constitute a separate violation, and each day on which any such article or substance is offered or exposed for sale or exchange shall constitute a separate violation. When the use of any such article or substance is prohibited, each day during which or any part of which said article or substance is so used or furnished for use, shall constitute a separate violation, and the furnishing of the same for use to each person to whom the same may be furnished shall constitute a separate violation. Whoever by himself or another violates any of the provisions of articles three, four, six, eight and nine or sections three hundred fourteen and three hundred fifteen of this chapter or of sections one hundred six, one hundred seven and one hundred eight of this chapter shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than fifty dollars, nor more than two hundred dollars, or by imprisonment of not less than one month nor more than six months or by both such fine and imprisonment, for the first offense; and by six months' imprisonment for the second offense.

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

CIRCULAR 99

Provisions of the Agricultural Law Relating to the Sale, Adulteration or Misbranding of

FOOD AND FOOD PRODUCTS

(Amended by Chapter 494 of the Laws of 1914)

1914

UNIVERSITY OF ILLINOIS
AUG 21 1915

§ 200. **Prohibition as to adulterated or misbranded food.**— No person or persons, firm, association or corporation shall within this state, manufacture, produce, sell, offer or expose for sale or serve in any hotel, restaurant, eating house or other place of public entertainment any article of food which is adulterated or misbranded within the meaning of this article. The term " food " as used herein shall include all articles used for food, confectionery or condiments by man, whether simple, mixed or compound.

§ 201. **Definition of adulterated or misbranded food.**— In the case of confectionery, an article shall be deemed to be adulterated if it contain terra alba, barytes, talc, chrome yellow, or other mineral substances or poisonous colors or flavors, or other ingredients deleterious or detrimental to health. In the case of food an article shall be deemed to be adulterated:

1. If any substance or substances has or have been mixed or packed with it so as to reduce or lower or injuriously affect its quality or strength, so that such product, when offered for sale, shall deceive or tend to deceive the purchaser.

2. If any substance or substances has or have been substituted wholly or in part for the article, so that the product, when sold or offered for sale, shall deceive or tend to deceive the purchaser.

3. If any valuable constituent of the article has been wholly or in part abstracted, so that the product, when sold or offered for sale, shall deceive or tend to deceive the purchaser.

4. If it contains any added poisonous ingredients or any ingredient which may render such article injurious to the health of the person consuming it.

5. If it consists in whole or in part of a filthy, decomposed or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

6. If it contains methyl or wood alcohol, in any of its forms, or any methylated preparation made from it.

An article of food shall be deemed to be misbranded:

1. If it be an imitation of or offered for sale under the distinctive name of another article.

2. If it be mixed, colored, powdered or stained in a manner whereby damage or inferiority is concealed, so that such product when sold or offered for sale, shall deceive or tend to deceive the purchaser.

3. If the package containing it or its label shall bear any statement regarding the ingredients or the substances contained therein which statement shall be false or misleading in any particular, or if the same is falsely branded as to the state or territory in which it is manufactured or produced or if it shall be contained in, or served in or from any bottle or receptacle falsely marked, labeled or branded as to the name of the person, persons or corporation manufacturing the same; provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

First. In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not included in definition first or third of misbranded articles of food in this section.

Second. In the case of articles labeled, branded or tagged so as to plainly indicate that they are mixtures, compounds, combinations, imitations or blends; provided, that the same shall be labeled, branded or tagged so as to show the character and constituents thereof; and provided further, that nothing in this article shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredients to disclose their trade formulas, except in so far as the provisions of this article may require to secure freedom from adulteration or imitation.

*§ 52. **Penalties.**— Every person violating any of the provisions of this chapter, shall forfeit to the people of the state of New York the sum of not less than fifty dollars nor more than one hundred dollars for the first violation and not less than one hundred dollars nor more than two hundred dollars for the second and each subsequent violation. When such violation consists of the manufacture or production of any prohibited article, each day during which or any part of which such manufacture or production is carried on or continued, shall be deemed a separate violation. When the violation consists of the sale, or the offering or exposing for sale or exchange of any prohibited article or substance, the sale of each one of several packages shall constitute a separate violation, and each day on which any such article or substance is offered or exposed for sale or exchange shall constitute a separate violation. When the use of any such article or substance is prohibited, each day during which or any part of which said article or substance is so used or furnished for use, shall constitute a separate violation, and the furnishing of the same for use to each person to whom the same may be furnished shall constitute a separate violation. Whoever by himself or another violates any of the provisions of articles three, four, six, eight and nine or sections three hundred fourteen and three hundred fifteen of this chapter or of sections one hundred six, one hundred seven and one hundred eight of this chapter shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than fifty dollars, nor more than two hundred dollars, or by imprisonment of not less than one month nor more than six months or by both such fine and imprisonment, for the first offense; and by six months' imprisonment for the second offense.

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*Extract from Article 3.

STATE OF NEW YORK

Department of Agriculture

Calvin J. Huson, Commissioner

CIRCULAR 100

List of Agricultural Fairs to be held in the State of New York, 1914

UNIVERSITY OF ILLINOIS
AUG 21 1915

(*Italic Indicates County in which Society is located*)

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
New York State Fair	Syracuse	Commission Pres. Robert F. Wagner, New York City Vice-Pres. Calvin J. Huson, Albany. George W. Driscoll, Syracuse. Thomas J. Cummings, Dunkirk. W. H. Jones, Woodbury. Barry Murphy, Medina. C. A. Wieting, Cobleskill. Sec.-Treas. A. E. Brown, Syracuse.	Aug. 31–Sept. 5 incl.
New York State Association of County Agricultural Societies.	Annual convention, Albany	Pres. Edward Thompson, 222 New York Ave., Brooklyn. Sec. G. W. Harrison, 131 North Pine Ave., Albany. Treas. A. E. Brown, Cahill Bldg., Syracuse.	Jan. 21–22, 1915.
New York State Association of Union Town Agricultural Societies.	Annual convention, Albany	Pres. George I. Wilber, Oneonta. Sec. Clyde E. Shults, Hornell. Treas. Archie C. Kilmer, Cobleskill, N. Y.	Jan. 21, 1915.
Albany.			
Albany County Agricultural Society and Exposition.	Altamont	Pres. E. G. Crannell, Altamont. Sec. Millard Frink, Altamont. Treas. George S. Vroman, Altamont.	Aug. 18–21 incl.
Allegany.			
Allegany County Agricultural Society.	Angelica	Pres. Frank Morton, Almond, R. D. 2. Sec. Guy O. Hinman, Angelica. Treas. Chas. D. Buchanan, Angelica.	Sept. 15–18 incl.
Cuba Fair and Racing Association.	Cuba	Pres. Fred. A. Keller, Cuba. Sec. George H. Swift, Cuba. Treas. H. C. Morgan, Cuba.	Sept. 22–25 incl.
Wellsville Fair Association.	Wellsville	Pres. Horace Davis, Wellsville. Sec. Oak Duke, Wellsville. Treas. Riley Allen, Allentown.	Sept. 1–4 incl.
ome.			
Broome County Agricultural Society.	Whitney Point	Pres. William Denning, Whitney Point. Sec. Homer R. Sullivan, Whitney Point. Treas. David L. Maxfield, Whitney Point.	Aug. 11–14 incl.
Binghamton Industrial Exposition.	Binghamton	Pres. J. E. Rogers, Binghamton. Sec. Henry S. Martin, Binghamton. Treas. H. C. Hardie, Binghamton.	Sept. 29–Oct. 2 incl.

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
Cattaraugus.			
Cattaraugus County Agricultural Society.	Little Valley	Pres. E. E. Waite, Little Valley. Sec. D. J. Bushnell, Little Valley. Treas. C. L. McLouth, Little Valley.	Sept. 7–11 incl.
Franklinville Agricultural and Driving Park Association.	Franklinville	Pres. W. S. Baker, Franklinville. Sec. R. L. Farnham, Franklinville. Treas. J. B. Baker, Franklinville.	Undecided.
Olean Agricultural and Industrial Association.	Olean	Pres. I. W. Miller, Olean. Sec. A. H. Miller, Olean. Treas. N. V. V. Franchot, Olean.	Sept. 7–11 incl.
Cayuga.			
Cayuga County Agricultural Corporation.	Moravia	Pres. F. D. Perry, Moravia. Sec. C. A. Silke, Moravia. Treas. C. M. Rathbun, Moravia.	Aug. 25–28 incl.
Chautauqua.			
Chautauqua County Agricultural Corporation.	Central Park, Dunkirk.	Pres. W. C. Doty, Sheridan. Sec. W. E. Clarke, Fredonia. Treas. E. L. Colvin, Fredonia.	Sept. 1–4 incl.
Chemung.			
Chemung County Agricultural Society.	Elmira	Pres. Jacob Miller, Elmira. Sec. Charles S. Lattin, Elmira. Treas. E. G. Crowell, Elmira.	Sept. 7–11 incl.
Chenango.			
Chenango County Agricultural Society.	Norwich	Pres. John H. White, Norwich. Sec. C. E. Harris, Norwich. Treas. George H. Crane, Norwich.	Aug. 25–28 incl.
Afton Driving Park and Agricultural Association.	Afton	Pres. Fred. Church, Afton. Sec. I. W. Seely, Afton. Treas. P. S. Krum, Afton.	Sept. 8–11 incl.
Riverside Agricultural Society.	Greene	Pres. F. J. Cunningham, Greene. Sec. E. P. Eaton, Greene. Treas. C. W. Cunningham, Greene.	Undecided.
Clinton.			
Clinton County Agricultural Society.	Plattsburg	Pres. Elmer F. Botsford, Plattsburg. Sec. William E. Parkhurst, Plattsburg. Treas. W. L. Pattisson, Plattsburg.	Sept. 7–11 incl.
Columbia.			
Columbia County Agricultural Society.	Chatham	Pres. Wm. H. Housman, Chatham. Sec. W. A. Dardess, Chatham. Treas. Samuel Kaufman, Chatham.	Sept. 7–11 incl.
Cortland.			
Cortland County Agricultural Society.	Cortland	Pres. F. H. Sears, Cortland. Sec. W. J. Greenman, Cortland. Treas. C. F. Brown, Cortland.	Aug. 18–21 incl.
Delaware.			
Delaware County Agricultural Society.	Delhi	Pres. W. B. Thompson, Delhi. Sec. T. B. Jennings, Delhi. Treas. E. R. Graham, Delhi.	Sept. 8–10.
Catskill Mountain Agricultural Society.	Margaretville	Pres. Clarke A. Sanford, Margaretville. Sec. S. W. Reed, Jr., Margaretville. Treas. Wm. B. O'Connor, Margaretville.	Aug. 18–21 incl.

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
Delaware—(continued).			
Delaware Valley Agricultural Society.	Walton.......	Pres. A. Ferris Reynolds, Walton. Sec. E. D. Baker, Walton. Treas. W. A. Shepard, Walton.	Sept. 1–4 incl.
Deposit Fair Association.	Deposit......	Pres. E. F. Smith, Deposit. Sec. F. D. Wilcox, Deposit. Treas. A. S. Wickwire, Deposit.	Undecided.
Dutchess.			
Dutchess County Agricultural Society.	Poughkeepsie .	Pres. John M. Ham, Millbrook. Sec. William T. Ward, Poughkeepsie. Treas. Vance C. Roberts, Poughkeepsie.	Sept. 7–11 incl.
Erie.			
Erie County Agricultural Society.	Hamburg.....	Pres. W. A. Clark, Eden. Sec. W. E. Taylor, Hamburg. Treas. Jacob Houck, Hamburg.	Sept. 22–25 incl.
Iroquois Agricultural Society.	Cattaraugus Reservation.	Pres. Elon Eells, Versailles. Sec. Orlando Doxtader, Versailles. Treas. Uly Nephew, Versailles.	Sept. 15–18 incl.
Essex.			
Essex County Agricultural Society.	Westport.....	Pres. S. E. Phinney, Wadhams. Sec. C. M. Howard, Westport. Treas. H. H. Winslow, Westport.	Aug. 25–28 incl.
Franklin.			
Franklin County Agricultural Society.	Malone......	Pres. F. D. Kilbourn, Malone. Sec. Walter J. Mallon, Malone. Treas. Thomas Adams, Malone.	Sept. 15–18 incl.
Genesee.			
Genesee County Agricultural Society.	Batavia......	Pres. W. H. Van Deusen, LeRoy. Sec. Fred. B. Parker, Batavia. Treas. C. W. Buckholts, Batavia.	Sept. 16–19 incl.
Greene.			
Greene County Agricultural Society.	Cairo........	Pres. George M. White, Freehold. Sec. Chas. D. Van Orden, Cairo. Treas. H. S. Olmsted, Cairo.	Aug. 18–20 incl.
Herkimer.			
Herkimer County Agricultural Society.	Herkimer.....	Pres. Charles Brown, Mohawk. Sec. I. P. Rasbach, Herkimer. Treas. W. H. Barry, Herkimer.	Sept. 7–10 incl.
Jefferson.			
Jefferson County Agricultural Society.	Watertown...	Pres. E. J. Colligan, Watertown, R. D. Sec. Ernest S. Gillett, Watertown. Treas. E. C. Maxson, Adams Center.	Aug. 25–28 incl.
Cape Vincent Agricultural Society.	Cape Vincent .	Pres. M. G. Fitzgerald, Cape Vincent. Sec. Frank Dezengremel, Cape Vincent. Treas. Arthur C. Gardner, Cape Vincent.	Sept. 1–4 incl.
Lewis.			
Lewis County Agricultural Society.	Lowville......	Pres. Ira Sharp, Lowville. Sec. M. M. Lyman, Lowville. Treas. W. J. Stoddard, Lowville.	Aug. 25–28 incl.
Livingston.			
Hemlock Lake Union Agricultural Society.	Hemlock.....	Pres. W. W. Hoppough, Hemlock. Sec. R. B. Short, Livonia, R. D. 2. Treas. George Rix, Hemlock.	Oct. 1–3 incl.
Madison			
Brookfield-Madison County Agricultural Society.	Brookfield....	Pres. A. D. Chesebro, Brookfield. Sec. F. M. Spooner, Brookfield. Treas. A. C. Miller, Brookfield.	Sept. 21–24 incl.

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
Madison—(continued).			
Four County Fair Association.	De Ruyter....	Pres. Arthur L. Smith, De Ruyter. Sec. Clifford W. Ames, De Ruyter. Treas. J. C. Stillman, De Ruyter.	Aug. 11–14 incl.
Monroe.			
Monroe County Agricultural Society.	Brockport....	Pres. T. Henry Dewey, Brockport. Sec. Warren B. Conkling, Brockport. Treas. Fred B. Richards, Brockport.	Sept. 2–5 incl.
Rochester Industrial Exposition.	Rochester....	Pres. Wm. H. Rogers, 243 Powers Bldg., Rochester. Sec. Edward F. Edwards, 306 Powers Bldg., Rochester. Treas. Howard A. Barrows, 110 Main St., East, Rochester.	Sept. 7–19 incl.
Montgomery.			
Montgomery County Agricultural Society.	Fonda........	Pres. E. E. Folmsbee, Fonda. Sec. J. B. Martin, Fonda. Treas. A. Z. Wemple, Fultonville.	Sept. 29–Oct. 3 incl.
New York.			
American Institute of the City of New York.	New York....	Pres. J. W. Bartlett, M. D. 322–324 West 23d St., New York. Sec. Charles E. Schaffner, 322–324 West 23d St., New York. Treas. James Y. Watkins. 322–324 West 23d St., New York.	Nov. 4–6 incl.
Niagara.			
Niagara County Agricultural Society.	Lockport.....	Pres. J. Milton Woodward, Lockport. Sec. R. N. Roberts, Lockport. Treas. John R. Earl, Lockport.	Aug. 25–29 incl.
Oneida.			
Oneida County Agricultural Society.	Rome........	Pres. Abner S. White, Rome. Sec. J. A. Ott, Rome. Treas. J. A. Ott, Rome.	Sept. 22–24 incl.
Vernon Agricultural Society.	Vernon.......	Pres. Wm. P. Spaulding, Vernon. Sec. C. G. Simmons, Vernon. Treas. J. D. Heignig, Vernon Center.	Sept. 29–Oct. 1 incl.
Boonville Fair Association.	Boonville.....	Pres. Clarence R. Sperry, Boonville. Sec. Frederick A. White, Boonville. Treas. Chas. J. Lewis, Boonville.	Sept. 8–11 incl.
Onondaga.			
Onondaga County Fair Association.	West Phoenix.	Pres. S. C. Pendergast, Phoenix. Sec. C. K. Williams, Phoenix. Treas. N. A. Hughes, Phoenix.	Aug. 18–21 incl.
Ontario.			
Ontario County Agricultural Society.	Canandaigua..	Pres. Henry G. Higley, Canandaigua. Sec. Clair L. Morey, Canandaigua. Treas. Geo. N. Nethaway, Canandaigua, R. D.	Sept. 17–19 incl.
Gorham Agricultural Society.	Reeds Corners.	Pres. Frank H. Henry, Canandaigua, R. D. Sec. W. S. Mosher, Canandaigua, R. D. Treas. W. G. Henry, Canandaigua, R. D.	Oct. 1–3 incl.

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
Ontario — (continued).			
Naples Union Agricultural Society.	Naples	Pres. ——————— Sec. C. E. Koby, Naples. Treas. D. J. Doughty, Naples.	Sept. 10–12 incl.
nge.			
Orange County Agricultural Society.	Middletown	Pres. Augustus Denniston, Washingtonville. Sec. David A. Morrison, Newburgh. Treas. Henry M. Howell, Middletown.	Aug. 25–28 incl.
Orleans.			
Orleans County Agricultural Society.	Albion	Pres. Fred. B. Tanner, Albion. Sec. William E. Frank, Albion. Treas. Warren S. Danolds, Albion.	Sept. 9–12 incl.
Oswego.			
Oswego County Agricultural Society.	Fulton	Pres. C. I. Kingsbury, Mexico. Sec. H. Putnam Allen, Fulton. Treas. V. W. Shattuck, Fulton.	Aug. 11–14 incl.
Sandy Creek, Richland, Orwell and Boylston Agricultural Society.	Sandy Creek	Pres. George H. Ackerman, Lacona. Sec. O. F. Whitford, Sandy Creek. Treas. B. D. Jones, Sandy Creek.	Aug. 18–21 incl.
Otsego.			
Otsego County Agricultural Society.	Cooperstown	Pres. Waldo C. Johnston, Cooperstown. Sec. H. H. Willsey, Cooperstown. Treas. Owen G. Clark, Cooperstown.	Sept. 22–24 incl.
Morris Fair Association.	Morris	Pres. C. H. Naylor, West Laurens. Sec. D. F. Wightman, Morris. Treas. Merton R. Porter, Morris.	Sept. 29–Oct. 1 incl.
Oneonta Union Agricultural Society.	Oneonta	Pres. Walter L. Brown, Oneonta. Sec. Shirley L. Huntington, Oneonta. Treas. Henry M. Bard, Oneonta.	Sept. 14–17 incl.
Richfield Springs Agricultural Society.	Richfield Springs.	Pres. Lester Young, Warren. Sec. L. A. Williams, Richfield Springs. Treas. John D. Cary, Richfield Springs.	Undecided.
Schenevus Valley Agricultural Society.	Schenevus	Pres. H. Bernard, Schenevus. Sec. J. P. Friery, Schenevus. Treas. E. J. Goddard, Schenevus.	Aug. 11–13 incl.
Putnam.			
Putnam County Agricultural Association.	Carmel	Pres. ——————— Sec. Charles S. Irish, Patterson. Treas. C. C. Bumford, Carmel.	Sept. 1–4 incl.
Queens.			
The Agricultural Society of Queens – Nassau Counties.	Mineola	Pres. John H. Vanderveer, Elmhurst. Sec. Lott Van de Water, Jr., Hempstead. Treas. Thomas H. Bacon, Hempstead.	Sept. 22–26 incl.
nsselaer.			
Rensselaer County Agricultural and Horticultural Society.	Troy	Pres. E. H. Sims, Troy. Sec. Farnam P. Caird, Troy. Treas. Wm. Bolton, Troy.	Aug. 18–21 incl.
Agricultural and Liberal Arts Society of Rensselaer County.	Nassau	Pres. Geo. E. Barringer, Castleton. Sec. Delmer Lynd, Nassau. Treas. E. S. Comstock, Nassau.	Sept. 15–18 incl.

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
Richmond.			
Richmond County Agricultural Society.	Dongan Hills	Pres. John Milnes, Port Richmond, S. I. Sec. Edward P. Doyle, Port Richmond. Treas. Wm. J. Crosson, Stapleton.	Sept. 2–7 incl.
Rockland.			
Rockland County Agricultural and Horticultural Association.	Orangeburg	Pres. Oswald A. Bauer, Sparkill. Sec. Dr. John T. Gilchrest, Nyack. Treas. Wm. E. Corne, Tappan.	Sept. 7–11 incl.
Rockland County Industrial Association.	New City	Pres. John C. Schmersahl, New City. Sec. E. S. Reimer, Congers. Treas. Douglas Allen, New City.	Aug. 31–Sept. 3 incl.
St. Lawrence.			
St. Lawrence County Agricultural Society.	Canton	Pres. John Bird, Canton. Sec. Charles M. Hale, Canton. Treas. Cyrus F. Clark, Canton.	Sept. 15–18 incl.
Oswegatchie Agricultural Society.	Ogdensburg	Pres. Andrew Irving, Ogdensburg. Sec. L. C. Nash, Ogdensburg. Treas. R. P. Johnston, Ogdensburg.	Aug. 31–Sept. 4 incl.
Gouverneur Agricultural and Mechanical Society.	Gouverneur	Pres. B. G. Parker, Gouverneur. Sec. Charles M. Tait, Gouverneur. Treas. Geo. E. Pike, Gouverneur.	Aug. 18–21 incl.
Raquette Valley and St. Regis Valley Agricultural Society.	Potsdam	Pres. George W. Sisson, Jr., Potsdam. Sec. H. M. Ingram, Potsdam. Treas. Frank L. Cubley, Potsdam.	Sept. 8–11 incl.
Saratoga.			
Saratoga County Agricultural Society.	Ballston Spa	Pres. Wm. H. Manning, Saratoga Springs. Sec. N. V. Witbeck, Ballston Lake. Treas. Walter I. Cavert, Ballston Spa, R. D. 2.	Aug. 24–28 incl.
Schoharie.			
Schoharie County Agricultural Society.	Schoharie	Pres. C. W. Vroman, Middleburg. Sec. Fred J. Schaeffer, Schoharie. Treas. E. L. Auchampaugh, Schoharie.	Aug. 24–27 incl.
Cobleskill Agricultural Society.	Cobleskill	Pres. Leland Hodge, Cobleskill. Sec. William H. Golding, Cobleskill. Treas. A. C. Kilmer, Cobleskill.	Sept. 21–25 incl.
Schuyler.			
Schuyler County Agricultural Society.	Watkins	Pres. J. Earl Beardsley, Odessa. Sec. Geo. C. Starkey, Watkins. Treas. W. L. Frost, Watkins.	Sept. 8–11 incl.
Seneca.			
Seneca County Agricultural Society.	Waterloo	Pres. George R. Lane, Waterloo. Sec. Edward Nugent, Waterloo. Treas. William K. Denniston, Waterloo.	Sept. 10–12 incl.
Steuben.			
Steuben County Agricultural Society.	Bath	Pres. A. D. Rosekrans, Cohocton. Sec. Chas. A. Shults, Bath. Treas. James Faucett, Jr., Bath.	Sept. 22–25 incl.
Hornellsville Fair	Hornell	Pres. Leslie D. Whiting, Canisteo. Sec. Clyde E. Shults, Hornell. Treas. Charles Adsit, Hornell.	Aug. 25–28 incl.

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
Steuben—(continued).			
Southern Steuben Agricultural Society.	Troupsburg	Pres. Ray Sanford, Troupsburg. Sec. H. B. Reynolds, Troupsburg. Treas. Will Tew, Troupsburg.	Sept. 1–5 incl.
olk.			
Suffolk County Agricultural Society.	Riverhead	Pres. Henry S. Brush, Huntington. Sec. Harry Lee, Riverhead. Treas. John L. Havens, Centre Moriches.	Sept. 15–18 incl.
Sullivan.			
Sullivan County Agricultural Society.	Monticello	Pres. John L. Pelton, Monticello Sec. Van Hornbeck, Monticello. Treas. Fred. M. Crain, Monticello.	Aug. 18–21 incl.
Tioga.			
Tioga County Agricultural Society.	Owego	Pres. Addison Lainhart, Owego. Sec. S. M. Lounsberry, Owego. Treas. W. W. Raymond, Owego.	Sept. 1–4 incl.
Northern Tioga Agricultural Society.	Newark Valley	Pres. U. G. Millard, Newark Valley Sec. Benj. M. Wager, Newark Valley. Treas. Chas. Recordon, Newark Valley.	Aug. 4–6 incl.
Tompkins.			
Tompkins County Agricultural and Horticultural Society.	Ithaca	Pres. John W. Preswick, Ithaca. Sec. Wm. E. Pearson, Ithaca. Treas. H. H. Wing, Ithaca.	Sept. 15–18 incl.
Dryden Agricultural Society.	Dryden	Pres. S. G. Lupton, Dryden. Sec. W. A. Munsey, Dryden. Treas. R. E. Stilwell, Dryden.	Sept. 8–11 incl.
Union Agricultural and Horticultural Society of Ulysses, Covert and Hector.	Trumansburg	Pres. William P. Biggs, Trumansburg. Sec. B. O. Wakeman, Trumansburg. Treas. Roscoe D. Sears, Trumansburg.	Aug. 25–28 incl.
Ulster.			
Ulster County Agricultural Society.	Ellenville	Pres. F. J. Potter, Ellenville. Sec. Samuel B. Son, Ellenville. Treas. W. Kelly Shook, Ellenville.	Aug. 11–14 incl.
Warren.			
The Warren County Fair	Warrensburg	Pres. Henry Griffing, Warrensburg. Sec. Fred. J. Hayes, Warrensburg. Treas. Louis E. Reoux, Warrensburg.	Sept. 1–4 incl
Washington.			
Washington County Agricultural Society.	Hudson Falls	Pres. Theodore Gilchrist, Argyle. Sec. Geo. A. Ferris, Hudson Falls. Treas. Asahel R. Wing, Fort Edward.	Sept. 8–11 incl.
Cambridge Valley Agricultural Society and Stock Breeders' Association.	Cambridge	Pres. John L. Hunt, Cambridge. Sec. Eliot B. Norton, Cambridge. Treas. Henry A. Qua, Cambridge.	Aug. 31–Sept. 4 incl.
Wayne.			
Wayne County Agricultural Society.	Lyons	Pres. William T. Jordan, Clyde. Sec. William Holloway, Lyons. Treas. Elmer Wolvin, Lyons.	Undecided.
Newark Fair Association	Newark	Pres. S. Emory Budd, Newark. Sec. F. E. Brown, Newark. Treas. W. H. Kelley, Newark.	Sept. 10–12 incl.

NAME OF SOCIETY	GROUNDS AT	OFFICERS	DATES
Wayne — (continued).			
Palmyra Union Agricultural Society.	Palmyra......	Pres. John H. Walton, Palmyra. Sec. W. H. Bush, Palmyra. Treas. Harry G. Chapman, Palmyra.	Sept. 24–26 incl.
Westchester.			
Westchester County Agricultural and Horticultural Society, Inc.	Mt. Kisco....	Pres. R. Ramsen Coles, Mamaroneck. Sec. James W. Daly, Mount Kisco. Treas. James Dunne, 42 Broadway, N. Y. City.	Oct. 1–3 incl.
White Plains Agricultural Fair and Westchester County Horse Show.	White Plains..	Pres. James C. Farrell, White Plains. Sec. E. B. Long, White Plains. Treas. James H. Moran, White Plains.	Sept. 16–19 incl.
Wyoming.			
Wyoming County Agricultural Society.	Warsaw......	Pres. Fred B. Keeney, Warsaw. Sec. James E. Jenning, Warsaw. Treas. William Walker, Warsaw.	Aug. 18–21 incl.
Silver Lake Agricultural and Mechanical Assocation.	Perry........	Pres. Byron Nevins, Perry. Sec. Chas. D. Barber, Perry. Treas. R. H. Cone, Perry.	Aug. 11–13 incl.
Yates.			
Yates County Agricultural Society.	Penn Yan....	Pres. Glenn L. Wheeler, Penn Yan. Sec. Frank R. Durry, Penn Yan. Treas. Guy S. Coats, Penn Yan.	Sept. 15–18 incl.
Dundee Fair Association	Dundee......	Pres. John J. O'Brien, Dundee. Sec. H. L. Woodruff, Dundee. Treas. Chas. J. Watson, Dundee.	Sept. 29–Oct. 1 incl.

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 101

UNIVERSITY OF ILLINOIS LIBRARY
AUG. 21 1915

List of Brands of Concentrated Commercial Feeding Stuffs Licensed for Sale in New York State from January 1st to June 1st, 1914

List of Brands of Concentrated Commercial Feeding Stuffs Licensed for Sale in New York State from January 1st to June 1st, 1914

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Acme Milling Co., Olean, N. Y.	Acme Feed. Acme Dry Mash.
Acme-Evans Co., Indianapolis, Ind.	Acme Feed.
Adikes, J. & T., Jamaica, N. Y.	Ground Feed. Nu Life.
Ajax Milling & Feed Co., New York, N. Y.	Ajax Flakes.
Akron Produce Co., Akron, N. Y.	Bower's Dairy Ration.
Albany Rendering Co., Albany, N. Y.	Albany Bone and Meat Meal for Poultry and Hogs. Albany Poultry Food prepared from Cooked Meat and Bone Scrap.
Allen Milling Co., Niagara Falls, N. Y.	"Alco" Mash for Layers. Allen's Nutro Chick Mash.
American Cotton Hull & Fibre Co., Memphis, Tenn.	"Cyclone" Cotton Seed Feed.
American Cotton Oil Co., The, New York, N. Y.	Red Tag Cottonseed Meal.
American Hominy Co., Indianapolis, Ind.	Maizeline Feed. Homeoline Feed. Homco Feed. Cerealine Feed.
American Linseed Co., New York, N. Y.	Linseed Oil Meal. Old Process Oil Meal. Hypro Linseed Meal.
American Malting Co., New York, N. Y.	No. 1 Maltsprouts. Standard Malt Sprouts. Hully Maltsprouts.
American Maize Products Co., New York, N. Y.	Cream of Corn Gluten Feed.
American Milling Co., Peoria, Ill.	Sucrene Scratch Feed with 5% Grit. Sucrene Scratch Feed. Mixing Feed. Sucrene Dairy Feed. Sucrene Chick Feed. Sucrene Chick Feed with 5% Grit. Cluck Cluck Scratch Feed. Cluck Cluck Scratch Feed with 5% Grit. Sucrene Horse and Mule Feed (with Alfalfa).

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
American Milling Co., Peoria, Ill....	Amco Old Process Linseed Meal.
	Sucrene Horse and Mule Feed.
	Amco Cottonseed Meal.
	Tip Top Scratch Feed with 5% Grit.
	Amco Alfalfa Meal.
Ames-Burns Co., Jamestown, N. Y....	Perfection Fancy Winter Bran with Ground Screenings not Exceeding Mill Run.
	A-B-C Fine White Hominy Meal.
	Perfection Fancy Winter Midds with Ground Screenings not Exceeding Mill Run.
Anheuser-Busch Brewing Association, St. Louis, Mo..................	Steam Dried Brewers' Grains.
Archer-Daniels, Linseed Co., Minneapolis, Minn.	Old Process Ground Linseed Cake.
Atlas Flour Mills, Milwaukee, Wis..	Atlas Wheat Bran with ground Screenings not Exceeding Mill Run.
	Atlas Wheat Flour Middlings with ground Screenings not Exceeding Mill Run.
Atwater, J. D., Genoa, N. Y.........	Corn Meal and Oat Feed.
Bagg, E. A., Conewango Valley, N. Y..	Daisy Dairy Ration.
Ballantine & Sons, P., Newark, N. J..	Malt Screenings.
	Malt Sprouts.
Barber & Bennett, Albany, N. Y.....	Rye Feed with ground Screenings not Exceeding Mill Run.
Baringer, M. F., Philadelphia, Pa....	M F B Prime Cottonseed Meal.
	Dried Brewers Grains.
	Hominy Feed.
Bartholomay Brewery Co., Rochester, N. Y..........................	Dried Brewers Grains.
	Malt Sprouts.
Bartlett Co., J. E., Jackson, Mich....	Mich "Farmer" Brand Cotton Seed Meal.
	"National" Gluten Feed.
Barwell, J W., Waukegan, Ill........	Blatchford's Calf Meal.
	Blatchford's Fill the Basket Egg Mash.
	Blatchford's Milk Mash.
	Blatchford's Pig Meal.
Bay State Milling Co., Winona, Minn.	"Winona" Fancy Mixed Wheat Feed and Wheat Screenings.
Baugh & Sons Co., Philadelphia, Pa..	Baugh's Meat Meal for Poultry.
Banner Milling Co., Buffalo, N. Y....	Banner Wheat Bran with Ground Screenings not Exceeding Mill Run.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Banner Milling Co. Buffalo, N. Y....	Banner Wheat Standard Middlings with Ground Screenings not Exceeding Mill Run. Banner Wheat Mixed Feed with Ground Screenings not Exceeding Mill Run. Banner Wheat Flour Middlings with Ground Screenings not Exceeding Mill Run.
Beier, Jr., W. J., Buffalo, N. Y......	Frontier Poultry Mash.
Belvidere Flouring Mill Co., Belvidere, N. Y..........................	Mixed Feed.
Berg Co., The, Philadelphia, Pa......	3 Medal Poultry Meat. Berg's 3 Medal Beef Scrap.
Birkett Mills, The, Penn Yan, N. Y..	Ground Buckwheat Screenings. Victrix Egg Mash. Wheat Bran with Ground Screenings not Exceeding Mill Run. Wheat Middlings with Ground Screenings not Exceeding Mill Run.
Boutwell Milling & Grain Co,, Troy, N. Y..........................	Rye Feed with Ground Screenings not Exceeding Mill Run.
Bowne Co., S. W., Brooklyn, N. Y...	Ground Feed. Bowne's Dry Mash for Poultry. Wheat Bran and Mill Run Screenings.
Bowker Fertilizer Co., New York, N. Y..........................	Bowker's Animal Meal for Fowls and Chicks.
Braue Inc., J. D., Jordan, N. Y.....	Braue's Mixfeed. Braue's Mixfeed with Molasses. Braue's Alfalfa Meal. Braue's Alfalfa Meal and Molasses.
Brehm, H. F., (See Waterloo Soap Works), Waterloo, N. Y...........	Brehms Beef Scrap and Bone.
Brisbin & Co., George E., Clyde, N. Y.	"Argood" Dried Distillers Grain.
Brode & Co., F. W., Memphis, Tenn..	Owl Brand Cottonseed Meal. Dove Brand Cottonseed Meal.
Brooklyn Elevator & Milling Co., Brooklyn, N. Y..................	Bemco Feed. Bemco Stock Feed. Bemco Poultry Mash.
Buffalo Cereal Co., Buffalo, N. Y.....	Bufceco Horse Feed. Bufceco Dairy Feed. Bufceco Creamery Feed. Bufceco Stock Feed. Bufceco Chop Feed. Bufceco Hominy Feed. Bufceco Steam Cooked Feed. Bufceco Poultry Mash. Iroquois Chop Feed. Iroquois Poultry Mash.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Buckeye Cotton Oil Co., Cincinnati, O.	"Buckeye" Prime Cottonseed Meal.
Buffalo Poultry Supply Co., Buffalo, N. Y.	Buffalo Brand Laying Mash.
Burlington Rendering Co., Brooklyn, N. Y.	Burlington Rendering Co's Bone and Meat Meal for Poultry. Burlington Poultry Food.
Burns, B. J., Buffalo, N. Y.	New Orleans Stock Feed.
Campbell, Fred C., Alpine, N. Y.	"Buckwheat Feed."
Cataract City Milling Co., Niagara Falls, N. Y.	Wheat Bran with Ground Screenings not Exceeding Mill Run. Wheat Standard Middlings with Ground Screenings not Exceeding Mill Run. White Middlings with Ground Screenings not Exceeding Mill Run.
Chapin & Company, Hammond, Ind.	Unicorn Dairy Ration. Green Diamond Hominy Meal. Green Diamond Brand Cottonseed Meal. Acorn Dairy Ration.
Chase. Hibbard Milling Co., Elmira, N. Y.	Offal Feed.
Chesbro Milling Co., Salamanca, N. Y.	Chesbro Stock Feed. Trojan Feed. Peerless Dairy Feed.
Chesbro Brothers, Attica, N. Y.	Mixed Feed "E". Molasses Screening Feed.
Clarke Brothers & Co., Peoria, Ill.	Empire State Dairy Feed.
Claro Milling Co., Wasceca, Minn.	Claro Wheat Mixed Feed with Ground Screenings. Claro Wheat Bran with Ground Screenings. Claro Wheat Standard Middlings with Ground Screenings.
Cleveland Milling Co,, Cleveland. O.	No. 2 Chop. Wheat Bran with ground Screenings not Exceeding Mill Run. Wheat Coarse Middlings with ground Screenings not exceeding Mill Run. Wheat Fine Middlings with ground Screenings not Exceeding Mill Run.
Clinton Sugar Refining Co., Clinton, Ia.	Clinton Corn Gluten Feed.
Clover Leaf Milling Co., Buffalo, N. Y.	Clover Leaf Calf Meal. Peerless Dairy Ration. Clover Leaf Dairy Feed. Clover Leaf Horse Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Cohocton Feed Mill, Cohocton, N. Y.	The Milky Way (Dairy Ration).
Commander Mill Co., Minneapolis, Minn.	Commercial Wheat Bran, with Ground Screenings not Exceeding Mill Run.
Commonwealth Feed Mills Co., St. Louis, Mo.	Missouri Sweet Horse and Mule Feed.
Commercial Milling Company, The, Detroit, Mich.	Henkel's Chop Feed.
	Standard Wheat Middlings with Ground Screenings.
	Mixed Feed with Ground Screenings.
Conkey Co., The G. E., Cleveland, O.	Conkey's Starting Food (For Chicks).
Consolidated Milling Corporation, Buffalo, N. Y.	Justice Brand Hominy.
	Buffalo Horse Feed.
	Union Molassified Horse Feed.
	Justice Brand Molassified Horse Feed.
	Husted Justice Brand Stock Scientific Feed.
	Justice Brand Molassified Dairy Feed.
	Lay-Egg-O Dry Mash.
	Husted O-Molene Horse Feed.
	Monarch Chop Feed (Fiber 9).
	Mayflower Stock Feed.
	Husted Justice Brand Horse Scientific Feed.
	Husted Justice Brand Creamery Scientific Feed.
	Husted Justice Brand Dairy Scientific Ration.
	Molassified Bran.
	Monarch Chop Feed (Fiber 12).
Continental Cereal Co., Peoria, Ill.	Continental Gluten Feed.
Coombs Milling Co., W. A., Coldwater, Mich.	Wheat Middlings with ground Screenings not Exceeding Mill Run.
Coonrod, W. H., Port Jervis, N. Y.	Horse Feed.
Corn Products Refining Co., New York, N. Y.	Buffalo Corn Gluten Feed.
	Globe Corn Gluten Feed.
	Queen Corn Gluten Feed.
	Diamond Corn Gluten Meal.
	Diamond Hog Meal.
Cox Co., Charles M., Boston Mass.	Columbia Wheat Mixed Feed with Ground Screenings not Exceeding Mill Run.
Crawford Brothers, Walton, N. Y.	Crawford Stock Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Crocker, William G., Minneapolis, Minn.	Wheat Flour Middlings with Ground Screenings not Exceeding Mill Run. Wheat Standard Middlings with Ground Screenings not Exceeding Mill Run. Wheat Mixed Feed with Ground Screenings not Exceeding Mill Run. Wheat Bran with Ground Screenings not Exceeding Mill Run.
Cross, E. N., Randolph, N. Y.	Red Mill Perfection Dairy Feed.
Cyphers Co., A., Newark, N. J.	Cypho Morning Mash (A) Grade. (B) Grade Cypho Morning Mash. (A) Grade Cypho Chick Food. (B) Grade Cypho Chick Food.
Cyphers Incubator Co., Buffalo, N. Y.	Cypher's Fattening Mash. Cypher's Growing Mash. High Protein Meat Scrap for Poultry. Cypher's Fertile Egg Mash. Cypher's Laying Mash.
David Stott Flour Mills, Inc., Detroit, Mich.	Stott's Spring Wheat Bran and ground Screenings.
Davis, S. P., Little Rock, Ark.	Good Luck Cotton Seed Meal.
Denver Alfalfa Milling & Products Co., Hartman, Colo.	Alfalfa Meal.
Deposit Milling Co., Deposit, N. Y.	Deposit White Mixed Feed.
Deutsch & Sickert Co., Milwaukee, Wis.	Climax Corn Distillers Grains. Pure Dried Brewers Grains. Malt Sprouts.
Devore & Co., H. W., Toledo, O.	"D & M" Scratch Feed.
Dewey Brothers Co., The., Blanchester, O.	Queen Cotton Seed Meal. Buckeye Feed. Dewey's Ready Ration. Corn Three D Grains. Bourbon Three D Grains. Queen Three D Grains. Eagle Three D Grains.
Dickinson Co., The Albert, Chicago, Ill.	White Cross Stock Feed. Queen Poultry Mash. Globe Egg Mash. Alfalfa Meal. Globe Scratch Feed.
Dock & Coal Co., Plattsburg, N. Y.	Dandy Feed.
Dold Packing Co., Jacob, Buffalo, N. Y.	Dold Quality Digester Tankage. Dold Quality Soluble Blood Flour. Dold Quality Meat Meal. Dold Quality Meat Scrap.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Donahue-Stratton Co., Milwaukee, Wis.	"Onyx Distillers Dried Grains."
Douglas Co., Cedar Rapids, Ia.	Douglas Corn Gluten Feed. Douglas Germ Oil Meal.
Eagle Roller Mill Co., New Ulm, Minn.	Yellow Hominy Feed.
East Waverly Milling Co., Waverly, N. Y.	Hominy Feed.
Eaton Grain & Feed Co., R. D., Norwich, N. Y.	Eaton's High Grade Beef Scrap. Eaton's Perfection Mash Mixture for Laying Fowls. Eaton's Special Dairy Feed.
Eckhart Milling Co., B. A., Chicago, Ill.	Bran with Ground Screenings not Exceeding Mill Run.
Economy Meat Food Co., Gardenville, N. Y.	Economy Meat and Bone Scrap.
Eddy & Sons, Inc., Daniel, Saratoga Springs, N. Y.	"Eddyson" Dry Mash.
Elevator Milling Co., Springfield, Ill.	Ideal Hominy Feed.
Elmore Milling Co., Oneonta, N. Y.	Elmore Dry Mash Feed. Elmore Stock Feed.
Elysian Milling Co., Elysian and Jamesville, Minn.	"Eclips" Wheat Bran with ground Screenings not Exceeding Mill Run. "Eclips" Wheat Standard Middlings with ground screenings not Exceeding Mill Run.
Empire Grain & Elevator Co., Binghamton, N. Y.	"Pearl" Hominy. "Neverfail" Dairy Feed.
Empire Mill & Coal Co., Schaghticoke, N. Y.	Empire Milk Producer.
Empire Manufacturing Co., Franklinville, N. Y.	Empire Stock Feed.
Empire Mills, Olean, N. Y.	Empire Feed.
Empire State Alfalfa Mills, Munnsville, N. Y., R. D. 3	Alfalfa Meal.
Evans Milling Co., Indianapolis, Ind.	Evans Hominy Feed.
Everett, Auchenpaugh & Co., Waseca, Minn.	E-A-CO Wheat Bran with Ground Screenings E-A-CO Wheat Mixed Feed with Ground Screenings. E-A-CO Wheat Middlings with Ground Screenings.
Everett & Treadwell Co., Kingston, N. Y.	C. O. & W. Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Ewart & Lake, Groveland, N. Y.	Wheat Bran — Mixed with Screenings not Exceeding Mill Run.
Excello Feed Milling Co., St. Joseph, Mo.	Excello Horse Feed.
Exchange Corporation, Lackawanna, N. Y.	Original Chop Feed.
Faramel Manufacturing Co., Buffalo, N. Y.	Faramel Dairy Feed.
	Boggs Ceramel Horse Feed.
	Faramel Horse Feed.
Farmers Feed Co., New York, N. Y.	"Bull Brand" Dried Brewers' Grains.
	Malt Sprouts.
Federal Milling Co., Lockport, N. Y.	Lucky Oat Corn Feed.
	Lucky Spring Wheat Bran with ground Screenings not Exceeding Mill Run.
	Lucky Spring Wheat Flour Middlings with ground screenings not Exceeding Mill Run.
	Lucky Spring Wheat Feed with ground Screenings not Exceeding Mill Run.
	Sphinx Fancy Spring Wheat Flour Middlings with ground Screenings not Exceeding Mill Run.
	Sphinx Fancy Spring Wheat Mixed Feed with ground Screenings not Exceeding Mill Run.
	Dairy Maid Winter Wheat Bran with ground Screenings not Exceeding Mill Run.
	Dairy Maid Winter Wheat Flour Middlings with ground Screenings not exceeding Mill Run.
	Dairy Maid Winter Wheat Mixed Feed with ground Screenings not Exceeding Mill Run.
Federal Stock Food Co., Mifflinburg, Pa.	Federal Poultry Food (A tonic).
	Federal Stock Food (A tonic).
Feed Products Milling Co., Chicago, Ill.	Eatall Scratch Feed (No Grit No Shell).
	Eatall Horse Feed.
	Eatall Poultry Mash.
Fietz, A. F., Empire State Alfalfa Mills, Munnsville, N. Y.	Alfalfa Meal.
Finn, George M., Syracuse, N. Y.	Ground Beef and Bone Scrap Chicken Feed.
Flavell Co., The, Asbury Park, N. J.	Pure Beef Craklings V. I. M.
Fleischmann Mfg. Co., Peekskill, N. Y.	Fleischmann's Dried Grain.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Frisbie Co., The L T., New Haven, Conn.	Frisbie's Poultry Food.
General Flour & Feed Company, Buffalo, N. Y.	Honest Cow Feed.
	Standard M. & S.
	Buffalo Meal.
	Big 4 Feed.
Gere Co., Harry G., New York, N. Y.	Jersey Horse Feed.
Germuth, William, Richmond Hill, N. Y.	Dunton Poultry Mash.
Gerow, G. W., Vails Gate, N. Y.	Gerow's Poultry Mash.
Gilbert & Nichols Co., Fulton, N. Y.	Fulton Dairy Feed.
Globe Elevator Co., Buffalo, N. Y.	Blue Ribbon Beef Scrap for Poultry.
	No. 1 Chop Feed.
	Buffalo Stock Feed.
	Buffalo Dairy Mixed Feed.
	Blue Ribbon Laying Mash.
	Anchor Dairy Feed.
	Anchor Horse Feed.
Globe Molasses Feed Co., Brooklyn, N. Y.	Globe Horse Feed.
	Alfalfa Molasses Horse Feed.
Golden Grain Milling Co., East St. Louis, Ill.	Puritan.
Gorman, John, Buffalo, N. Y.	Boat Sweepings.
Gottlieb, William, New York, N. Y.	Regina Dried Brewers Grains.
Grandin Milling Co., D. H., Jamestown, N. Y.	Red Flag Mixed Feed.
	Grandin's Stock Food.
	Grandin's Stock Food.
Hamilton & Son, William, Honeoye Falls, N. Y.	Wheat Bran with Ground Screenings not Exceeding Mill Run.
Hamlin & Son, Dwight E., Pittsburgh, Pa.	H. & S. Horse, Mule & Dairy Feed.
Harter Milling Co., Toledo, O.	Harter's Wheat Middlings with Ground Screenings not Exceeding Mill Run.
	Harter's Mixed Feed with Ground Screenings not Exceeding Mill Run.
Harvey Seed Co., Buffalo, N. Y.	Alfalfa Meal.
	Electric Poultry Food.
Haskell & Co., W. H., Toledo, Ohio	Haskell's Stock Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Hauenstein & Co., Buffalo, N. Y.	Old Process Linseed Meal.
Haywood Alfalfa Warehouse Co., Kansas City, Mo.	Algren Alfalfa Meal.
Hecker Cereal Co., The, New York, N. Y.	Hecker's Manhattan Feed. Hecker's Stock Feed.
Hecker-Jones-Jewell Milling Co., Buffalo, N. Y.	Standard Middlings with Mill Run Screenings. Flour Middlings with Mill Run Screenings. Choice Bran with Trace of Screenings.
Henry & Missert, Buffalo, N. Y.	B. S. Stock Food. Matchless Complete Ratio Dairy Feed. Holstein Milk Food. Malt Feed.
Hen-ty Manufacturing Co., The, Auburn, N. Y.	The Hen-ty Laying Mash. The Hen-ty Chick Feed.
Heneta Bone Co., Newark, N. J.	Hen-o-la Dry Mash.
Herendeen Milling Co., Charles, Chicago, Ill.	Herendeen's Hominy Feed.
Herrick & Son, A. H., Watertown, N. Y.	Herricks Quality Soft Feed.
Hicky & Co., D. H., Memphis, Tenn.	"Canary Brand" Cotton Seed Meal.
Hinds & Co., J. A., Rochester, N. Y.	Wheat Bran with Ground Screenings not Exceeding Mill Run.
H. O. Company, The, Buffalo, N. Y.	The H. O. Company's De-Fi Feed. The H. O. Company's Milk Feed with Molasses. The H. O. Company's Horse Feed with Molasses. The H. O. Company's Algrane Milk Feed. The H. O. Company's Algrane Scratching Feed. The H. O. Company's Dry Poultry Mash. The H. O. Company's Poultry Feed. The H. O. Company's Algrane Horse Feed. The H. O. Company's Steam-Cooked Chick Feed. The H. O. Company's Chick Feed. The H. O. Company's New England Stock Feed. Force Screenings.
Hodgman Milling Co., Painted Post, N. Y.	Chop Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Hoffman & Co., Syracuse, N. Y.	Brewers Dry Grain.
Holdridge Milling Co., Randolph, N. Y.	Royal Milk Producer.
Hollands & Son, Stephen, Hornell, N. Y.	Holland's Dry Mash.
Hottelet & Co., Milwaukee, Wis.	XX Distillers Dried Grains. Hector, Distillers Dried Grains. Dried Beet Pulp. Holstein, Brewers Dried Grains.
Hubbard Milling Co., Mankato, Minn.	Flaky Bran and Ground Screenings not Exceeding Mill Run.
Hubinger Brothers Co., J. C., Keokuk, Iowa	KKK Corn Glūten Feed.
Hudson Brothers, Sanborn, N. Y.	Crown Horse Feed.
Humphreys-Godwin Co., Memphis, Tenn.	Dixie Brand Cottonseed Meal.
Huron Milling Co., The, Harbor Beach, Mich.	Jenk's Corn Gluten Feed.
Indiana Milling Co., Terre Haute, Ind.	Sterling Feed. Holstein Feed.
Imperial Cotto Milling Co., Peoria, Ill.	Imperial Cotto Brand Choice Cotton Seed Meal.
Illinois Feed Mills, St. Louis, Mo. (Branch Ralston, Purina Co.)	Star Feed with Molasses.
Independent Hominy Co., Portsmouth, Ohio	In-Ho-Co Hominy Feed.
International Glue Co., Boston, Mass.	Red Star Brand Fish Scraps.
International Stock Food Co., Minneapolis, Minn.	International Grofast Calf Meal.
International Sugar Feed Co., Minneapolis, Minn.	International Special Dairy Feed. International Dairy Feed. International Climax Feed. Dan Patch Horse Feed. International Dan Patch Special Horse Feed. International Poultry Feed (Chick Size). International Poultry Feed (Scratch Size). International Climax Horse Feed.
Jamestown Electric Mills, Jamestown, N. Y.	Purity Poultry Mash. Jem Stock Feed. Purity Milk Maker.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Joshel, M. A., Geneva, Ill	Peerless Dried Brewers Grains.
Keever Starch Co., The, Columbus, O.	Keever Gluten Feed.
Kelloggs & Miller, Amsterdam, N. Y.	Pure (Old Process) Oil Meal.
Kelsey, A. T., Mecklenburg, N. Y.	Buckwheat Feed with Hulls.
Kemper Mill & Elevator Co., Kansas City, Mo.	Anchor Brand with ground Screenings not Exceeding Mill Run.
	Anchor Brand Choice Cottonseed Meal.
Kenyon, Fred M., Williamson, N. Y.	Supreme Dairy Feed.
Keutsch & Swartz, Co., Inc., New York, N. Y.	K. & S. Wheat Bran and Millrun Screenings.
	K. & S. Wheat Middlings and Millrun Screenings.
Kornfalfa Feed Milling Co., Kansas City, Mo	KC Straight Alfalfa Molasses Feed.
	Kornfalfa Kandy Feed.
	Kay Horse & Mule Feed.
	Pioneer Alfalfa Meal.
Krause Milling Co., Charles A., Milwaukee, Wis.	Badger Horse Feed.
	Badger Dairy Feed.
	Badger Stock Feed 11-5-7.
	Badger Hominy Feed.
	Badger Cream Flakes.
	Badger Fancy Mixed Feed.
	Badger Wheat Middlings & Maizo Reddog Flour.
	Maizo Red Dog Flour.
	Badger Stock Feed 10-4½-12.
Labar & Lain, Port Jervis, N. Y.	Horse Feed.
Lapham & Parks, Glens Falls, N. Y.	Corn, Oats and Rye Feed.
Larrowe Milling Co., Detroit, Mich.	Larro-Feed.
	Dried Beet Pulp and Molasses.
	Dried Beet Pulp.
	Staff Brand High-Grade Cotton Seed Meal
	Brownie Grains, Steam-Dried Distillers' Grains
Law & Wilber, Inc., Collins, N. Y.	Square Deal Dairy Ration.
Laxo Cake Meal Co., Chicago, Ill.	Old Process Laxo Cake Meal.
Lembeck & Betz Eagle Brewing Co., Watkins, N. Y.	Malt Sprouts.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Lowell Fertilizer Co., Boston, Mass..	Lowell Bone and Meat Meal for Poultry and Hogs. Lowell Poultry Food, Prepared from Cooked Meat & Bone Scraps.
Mann Bros. Co., The, Buffalo, N. Y...	Pure Old Process Linseed Oil Meal.
Matthews & Harrison, Kingston, N. Y.	Colonial Stock Feed. Arcade Stock Feed.
Maurer, Martin R., Elizabeth, N. J..	Meat and Bone Scrap.
Meader-Atlas Co., The, New York, N. Y.	Atlas Horse Feed.
Meadville Penna. Distilling Co., Meadville, Pa.	Rye Distillers Dried Grains.
Merchants Distilling Co., Terre Haute, Ind.	Merchants High Grade Dairy Feed.
Merrell-Soule Co., Syracuse, N. Y....	Merrell-Soule Calf Food.
Meyer Malting Co., George J., Buffalo, N. Y.	Malt Sprouts.
Midland Linseed Products Co., Edgewater, N. J. and Minneapolis, Minn.	Midland Brand Ground Linseed Cake.
Milwaukee Grain & Feed Co., Milwaukee, Wis.	Crown Brewers Dried Grains.
Miner-Hillard Milling Co., Wilkes-Barre, Pa.	Choice Steam Cooked Hominy Feed.
Moffatt, Henry C., Buffalo, N. Y.....	Malt Sprouts.
Molassine Co. of America, Boston, Mass.	Molassine Sphagnum Feed.
Moon & Co., George Q., Binghamton, N. Y.	Fresh Ground Mixed Feed.
Morris Brothers, Oneonta, N. Y......	Morris Stock Feed.
Moses Bros., Eaton, N. Y.	Madison Stock Feed.
Mosley & Motley Milling Co., Rochester, N. Y.	Wheat Middlings with Ground Screenings not Exceeding Mill Run. By-product Ground Wheat Screenings. Big B Mixed Feed.
Mystic Milling Co., Sioux City, Ia....	Hominy Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Mystic Milling & Feed Co., Rochester, N. Y.	Mystic Feed for Horses, Cattle & Swine.
	Mystic Growing Mash.
	Mystic Laying Mash.
McCoy, George E., Peekskill, N. Y.	Evaporated Bone & Meat Meal.
McEwen Milling Co., R. H., Ogdensburg, N. Y.	Pontiac Dairy Ration.
National Milling Co., Toledo, O.	Wheat Bran with Ground Screenings not Exceeding Mill Run.
Neumond, K. & E., St. Louis, Mo.	"Goldnes Kalb" Brewers Dried Grains.
Newhof & Son, Lewis, Albany, N. Y.	Poultry Food.
New York & Kentucky Co., Rochester, N. Y.	Pure Rye Distillers Grains.
	O. F. C. Distillers Grains.
	Columbia Corn Distillers Grains.
Nichols Brothers, Kennedy, N. Y.	Old Nick Milk Maker.
Noblesville Milling Co., Noblesville, Ind.	N. M. Co's. Mixed Feed.
North West Mills Co., Winona, Minn.	North-West Dairy Feed.
	"Bill's" Calf Meal.
Northwestern Consolidated Milling Co., Minneapolis, Minn.	Wheat Standard Middlings with Ground Screenings not Exceeding Mill Run.
	Wheat Mixed Feed Composed of Wheat Bran, Flour Middlings and Ground Screenings not Exceeding Mill Run.
	Wheat Flour Middlings with Ground Screenings not Exceeding Mill Run.
	Planet Feed.
Ogdensburg Roller Mills, Ogdensburg, N. Y.	Oswegatchie Feed.
	Ogdensburg Roller Mills Bran with Screenings.
O. K. Co., The, New York, N. Y.	Puritan Chick Food.
Omaha Alfalfa Milling Co., Omaha, Nebr.	Perfection Horse Feed.
	Green Meadow Dairy Feed.
Orr & Sons, William, Orrs Mills, N. Y.	Orr's Mixed Feed.
	Orr's Digestable Mash.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Park & Pollard Co., The, Boston, Mass.	Stock Feed. Growing Feed. Dry-Mash. Blue Ribbon Meat Scraps. Alfalfa. Gritless Chick Feed. Margaret Mahaney's Turkey Feed.
Parker, T. R., Richfield Springs, N. Y.	Otsego Dairy Feed.
Patent Cereals Co., The, Geneva, N. Y.	Hominy Feed.
Patteson, G. E. & Co., Memphis, Tenn.	Crown Horse Feed. Katleat Dairy Food. Valley Poultry Food. Valley Feed for Little Chicks.
Perot Malting Co., Buffalo, N. Y....	Malt Sprouts.
Personius & Son, D. V., Waverly, N. Y.	Improved Dry Mash.
Peters Mill Co., M. C., Omaha, Nebr..	Peters' King Corn, Oats, Alfalfa, Molasses Feed. Peters' Repeter Horse Feed. Peters' Lucern Alfalfa Meal. Peters' June Pasture Dairy Meal. Peters' Arab Horse Feed. Peters' Alfal-fat Sugar Meal. Peters' Alfalfa Queen Mills Balanced Dairy Feed.
Phelps & Sibley Co., Cuba, N. Y......	Phelps & Sibley Co.'s Favorite Poultry Mash. Yellow P. & S. Feed. White P. & S. Feed.
Pillsbury Flour Mills Co., Minneapolis, Minn.	Pillsbury's Wheat Bran with Ground Screenings not Exceeding Mill Run. Pillsbury's Wheat Standard "B" Middlings with Ground Screenings not Exceeding Mill Run. Pillsbury's Wheat "A" Middlings with Ground Screenings not exceeding Mill Run. Pillsbury's Fancy Wheat Mixed Feed with Ground Screenings not Exceeding Mill Run.
Pioneer Cereal Co., The, Akron, O....	Pioneer Stock Feed.
Postum Cereal Co., Battle Creek, Mich.	CXX Feed.
Pratt Food Co., Philadelphia, Pa....	Pratts Baby Chick Food.
Purity Oats Co., Keokuk, Iowa......	Purity Reground Oat Hulls.
Quaker City Mfg. Co., Philadelphia, Pa.	Quaker City Brand Beef Scraps.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Quaker Oats Co., The, Chicago, Ill....	American Poultry Food.
	Boss Feed.
	Buckeye Feed.
	C. O. & B. Feed.
	Green Cross Horse Feed, Molasses Mixed Feed.
	Sterling Stock Feed.
	Schumacher Stock Feed.
	Schumacher Special Horse Feed.
	Schumacher Calf Meal.
	Schumacher Little Chick Feed.
	Victor Feed.
	White Diamond Feed.
	Yellow Hominy Feed.
	Schumacher Scratch Grains.
	Quaker Dairy Feed with Molasses.
	Blue Ribbon Dairy Feed.
	Daisy Dairy Feed.
	Maz-All Corn Feed.
	Red Star Feed.
	Quaker Poultry Mash.
Ralston Purina Co., St. Louis, Mo....	Purina Dairy Feed.
	Purina Feed with Molasses.
	XX Good Feed with Molasses.
	Good Luck Feed with Molasses.
	Winner Feed with Molasses.
	Eagle A Brewers' Dried Grains.
	Purina Chicken Chowder with Charcoal.
	Purina Chick Feed.
	Protena Dairy Feed.
Rankin & Co., M. G., Milwaukee, Wis.	Durham Dried Brewers Grains.
	Jersey Malt Sprouts.
	Jersey Hominy Feed.
Reading Bone Fertilizer Co., Reading, Pa.	Reading Poultry Meat.
Reynolds, John A., Albany, N. Y....	Peerless Stock Feed.
Robinson & Erler, Inc., Riverhead, N. Y.	Erler's Horse Feed.
	Erler's Cow Feed.
Romaine, D. W., Jersey City, N. J...	Boiled Beef and Bone.
Rosekrans-Snyder Co., Philadelphia, Pa.	Pilsner Brewers' Dried Grains.
Ryde & Co., Chicago, Ill.............	Ryde's Cream Calf Meal.
Schlitz Brewing Co., Joseph, Milwaukee, Wis.	Schlitz Purity Dried Grains.
Schwill & Co., Albert, Buffalo, N. Y..	Malt Sprouts.
Sheffield King Milling Co., Minneapolis, Minn.	Gold Mine.
	Fairybow.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Smith & Wallace, J. C., Newark, N. J.	Prize Horse Feed.
Smith, Fred, Elmira, N. Y.	Smith's Special Egg Mash.
Smith, Thomas, West Winfield, N. Y.	Choice Fine Hominy.
Somers & Co., San Francisco, Cal.	Red Star Brand Alfalfa Meal.
Soper Co., J. E., Boston, Mass.	Blue Ribbon Hominy Chop.
Southern Cotton Oil Co., Charlotte, N. C.	"Special" Cotton Seed Meal.
Sparks Milling Co., Alton, Ill.	Try Me Mixed Feed.
Spratt's Patent (America) Ltd., Newark, N. J.	Chick Meal. Spratt's Ground Meat.
Staley Mfg. Co., A. E., Decatur, Ill.	Staley's Corn Gluten Feed.
Stanton, H. M., Schenectady, N. Y.	Ground Beef Scraps.
Strait Milling Co., J. H., Canisteo, N. Y.	No. 2 Feed.
Stumpp & Walter Co., New York, N. Y.	Quality Kind Mash Food. Quality Kind Meat Scraps.
Sugarine Co., The, Peoria, Ill.	Sugarine Dairy Feed. Sugarine Horse & Mule Feed (with Alfalfa). Sugarine Scratch Feed. Sugarine Chick Feed.
Suffern-Hunt Mills, Decatur, Ill.	Acme Hominy Feed.
Swift & Co., Chicago, Ill.	Swift's Digester Tankage. Swift's Meat Scrap. Swift's Laymore Meat Scraps. Swift's Eureka Meat Scraps.
Syracuse Milling Co., Syracuse, N. Y.	Syragold Dairy Feed. Syragold Stock Feed. Syragold Dry Mash.
Syracuse Rendering Co., Syracuse, N. Y.	Syracuse Poultry Food prepared from Cooked Meat & Bone Scrap. Syracuse Bone & Meat Meal for Poultry and Hogs.
Teed's Sons, W. I., Sayre, Pa.	Teed's Ready Mixed Laying Mash.
Thompson & Mould, Goshen, N. Y.	Mixed Feed. Malt Sprouts. Corn Bran. Ground Screenings. Special Hominy Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Thompson Milling Co., Lockport, N. Y.	Angelus Mixed Feed and Screenings. Angelus Flour Middlings and Screenings. Angelus Middlings and Screenings. Angelus Bran and Screenings.
Thornton & Chester Milling Co., Buffalo, N. Y.	T. & C. Wheat Middlings with Ground Screenings not Exceeding Mill Run. T. & C. Wheat Coarse Midds with Ground Screenings not Exceeding Mill Run. T. & C. Wheat Bran with Ground Screenings not Exceeding Mill Run. T. & C. Wheat Mixed Feed with Ground Screenings not Exceeding Mill Run.
Tioga Mill & Elevator Co., Waverly, N. Y.	Derby Meal. Economy Feed. Derby Stock Feed. Tioga Dry Mash.
Toledo Seed & Oil Co., Toledo, O.	Major Brand Old Process Oil Meal.
Tomlinson & Son, George, Perry, N. Y.	Chop Feed.
Traders & Producers Supply Co., Buffalo, N. Y.	Chippewa Fancy Midds.
Tripp & Sick, Cohocton, N. Y. (Cohocton Feed Mill)	The Milky Way (Dairy Ration).
Ubiko Milling Co., The, Cincinnati, O.	Fourex Distillers Dried Grains. Union Grain, Ubiko, Biles Ready Dairy Ration. Ubiko Horse and Stock Feed. Goodrich Distillers Dried Grains.
United Starch & Refining Co., Edinburg, Ind.	Union Corn Gluten Feed.
United Cereal Mills, Ltd., Buffalo, N. Y.	"Cooked Corn Feed."
United States Frumentum Co., Detroit, Mich.	Frumentum Hominy Feed.
United States Sugar Feed Co., Milwaukee, Wis.	U. S. Sugared Feed.
Urban Milling Co., George, Buffalo, N. Y.	Wheat Middlings with Ground Screenings not Exceeding Mill Run. Wheat Mixed Feed with Ground Screenings not Exceeding Mill Run. Wheat Bran with Ground Screenings not Exceeding Mill Run. Rye Feed with Ground Screenings not Exceeding Mill Run.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Van Buren, E. T., Hobart, N. Y.	Horse Feed No. 2.
Van Iderstine Co., The, Long Island City, N. Y.	Darling's High Protein Meat Scraps. Darling's Pure Ground Meat Scraps. Darling's 4% Protein Digester Tankage. Darling's Pure Ground Meat Meal. Darling's 6% Protein Digester Tankage. Darling's Blood Meal.
Van Iderstine & Son, F. A., Brooklyn, N. Y.	High Protein Meat and Bone Scrap for Poultry.
Vermont Cereal Co., Burlington, Vt.	"Waumbeck" Milk Maker Mixture 23-9-12. "Waumbeck" Butter Fat Meal. "Waumbeck" Milk Maker Mixture 24-5. 75-18.
Victor Milling Co., Victor, N. Y.	Victor Spring Wheat Bran with Screenings not Exceeding Mill Run. Victor Spring Wheat Middlings, with Screenings not Exceeding Mill Run.
Wallace, L. R., Middletown, N. Y.	Mapes' Balanced Ration for Poultry. Our Best Horse Feed.
Waller & Co., A., Henderson, Ky	Bluegrass Feed.
Warner & Stellwagen, Brooklyn, N. Y.	Sterling Horse Feed.
Washburn-Crosby Co., Philadelphia, Pa.	Wheat Bran with Ground Screenings not Exceeding Mill Run. Wheat Standard Middlings with Ground Screenings not Exceeding Mill Run. Wheat Mixed Feed with Ground Screenings not Exceeding Mill Run. Wheat Flour Middlings with Ground Screenings not Exceeding Mill Run.
Wash. Co. Alfalfa M. F. & Milling Co., Ft. Calhoun, Nebr.	Butlers Special Horse Feed.
Waterloo Malting Co., Waterloo, N. Y.	Malt Sprouts.
Waterloo Soap Works, Waterloo, N. Y., H. F. Brehm, Prop.	Brehms Beef Scrap and Bone.
Weigel, Albert A., Buffalo, N. Y.	Stone Mills Mixed Feed.
Weiss Alfalfa Stock Food Co., Otto, Wichita, Kan.	Otto Weiss Sweet Feed No. 1.
Westchester Grain Co., Port Chester, N. Y.	Corn and Oat Chop Feed.

Name and Address of Manufacturer or Jobber.	*Brand or Trade Name.*
Western Grains & Feed Co., Chicago, Ill.	Dried Brewers' Grains. Malt Sprouts. Atlantic Grains. No. 2 Atlantic Grains. Rye Grains.
Western Grain Products Co., Hammond, Ind.	Chicago Horse & Mule Feed. Hammond Dairy Feed.
Wheelock Co., W. J., Greigsville, N. Y.	Wheelock's Dairy Feed. Wheelock's Horse Feed.
Wollenberg Brothers, Buffalo, N. Y.	W. B. Stock Feed.
Xtravim Molasses Feed Co., Boston, Mass.	Xtra-vim Feed.
Zwickel Malting Co., The C., Buffalo, N. Y.	Malt Sprouts.

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 102

UNIVERSITY OF ILLINOIS
AUG 21 1915

List of Nurserymen in the State of New York Who Received Certificates of Inspection for the Year Ending September 1, 1914

ALBANY
J. B. LYON COMPANY, PRINTERS
1914

A

Acomb Estate, D. G., Dansville, N. Y.
Adams, Gordon, Penn Yan, N. Y., R. F. D.
Albro, Edward, Geneva.
Allen Nursery Co, Rochester.
Amawalk Nursery, Amawaik.
Ammamn, Chas., Yonkers.
Arcadia Rose Co., Newark.
Archias Seed Store, Newark.

B

Bacon Bros., Canandaigua.
Bacon, Edward, Dansville.
Bacon, W. E., Dansville.
Baker, Bert, Hoosick Falls, R. F. D.
Ballard, George M. S., 28 Prospect St., Oneida.
Banker, Daniel G., Dansville.
Bannister Bros., Syracuse.
Bantleman, H. L., Tuckahoe Road, Yonkers.
Barteldes Seed Co., Newark (care Jackson & Perkins Co.).
Beck, Fred, Hillsdale.
Bell, Charles, 4 Sheridan Ave., Troy.
Bell, J. J., Seed Co., Deposit.
Bell, Robert, Troy, R. F. D. 3.
Bell & Son, J. W., Portland.
Bellis Bros., Dansville.
Bellis, D. A., Penn Yan, Route 2.
Benard, John, Brighton.
Benedict Bros., Water Mill.
Benedict, Chas., Liberty, R. F. D.
Benning, H. H., Clyde.
Benson, Walter, Hastings.
Benzenburg, Jacob, Brant.
Berger, C. J., 2210 Ave. G., Brooklyn.
Billings & Billings, Webster.
Black, George, Forestville.
Blodgett, F. H., Pulteney.
Bloodgood Nurseries, Flushing.
Blount, A. G., Hastings.
Blowers Estate, H. W., Westfield.
Bogart, William, Marion.
Bogue, Dewane, Medina.
Bogue, Henry, Medina.
Bogue, Nelson, Batavia.
Boldt, George C., Alexandria Bay.
Bool Floral Co., 215 State St., Ithaca.
Borst, Mrs. Bertha, Seward.
Bower, F. A., Lockport.
Bowman & Son., T. W., Niagara Falls.
Bradley, L. Harry, Ransomville.
Brooks, J. R., Monroe.
Brow, F. W., Nursery Co., Rose Hill.
Brown Bros. Co., Rochester.
Brown, E. Stanley, East Moriches.
Brown, Lewis, Bluff Point.
Bryant Bros., Dansville.
Bryant & Son, L. J., Newark.
Bryant, W. C., Dansville.
Buchan, Charles, Stanley, R. F. D. 2.
Buffalo Botanical Garden, Buffalo.
Burfiend, John R., & Son, Hartsdale.
Burger, Frank D., Pulteney.
Burgevin, Paul J., Port Chester.
Burke, M. J., Dansville.
Burmingham, Thomas, New Rochelle.
Burnett, F. J., Webster.
Burnett, Mrs. Mary, Webster.
Burns, Michael, & Son, Stanley.
Burns, S. T., Alton.
Burt, William D., Dalton.
Bush, Mrs. Lillian, Hastings.
Butman, Olan, Hastings.
Button, Herbert, Cazenovia.
Byron, M. J., Dansville.

C

Callahan, E. E., Feranbaugh.
Campbell, Thos. J., Geneva, R. F. D. 2.
Canagher, Mathew, Geneva.
Carney, Walter A., Dansville.
Carney, W. S., Dansville.
Cartwright, I. D., Dansville.
Case, Wm., Irondequoit.
Cass, W. & T., Geneva.
Castner, E. B., Penn Yan, Route 2.
"Cedar Hill Gardens, The," Sea Cliff.
Central New York Nurseries, Geneva.
Chaffee, J. N., Clay.
Charlton, John, & Sons, Rochester.
Charlton Nursery Co., Rochester.
Chase, Charles H., Rochester.
Chase Nurseries, The, Geneva.
Chase, George H., & Co., (Malden, Mass.) Geneva.

Chase, Homer N., & Co., (Auburn, Maine) Geneva.
Chase Bros. Co., Rochester.
Chase, The R. G., Co., Geneva.
Childs, John Lewis, Floral Park.
Chism, C. J., Rochester.
Christian Bros., Dansville.
Church, R. L., Skaneateles.
Clark, A. W., 1729 Union St., Schenectady.
Clark, P. J., Monticello.
Clark, The Florist, Mt. Vernon.
Clark, Frank R., Glenwild.
Clark Nursery Co., Waterloo.
Clifton, L. J., Memphis.
Cline, W. J., Rochester.
Cobb, W. F., & Co., (Franklin, Mass.) Geneva.
Colvin, E. L., Fredonia.
Comar, J. F., Dansville.
Coney, N., Monticello.
Conservation Commission, Albany.
Cooke, John M., Tarrytown.
Cooley, J. S., Groveland Station.
Coon,. O. A., Nevis.
Coop, Allen, Hastings.
Cooper, E. J., Chemung.
Cooper, George, Lyndonville.
Cooper, Samuel, Delavan.
Cooper, Irwin, Geneva.
Corcoran & McCready, Geneva.
Cornell, Edmund W., Clinton Corners.
Costick, Edward, Irondequoit.
Costich, Gilbert, Rochester.
Costich, Sepherine, Irondequoit.
Cottage Gardens Co., Inc., Queens.
Cottam, Geo. W., Tuckahoe.
Crandell, H. L., Glens Falls.
Crosby, Fred, Penn Yan, Route 2.
Culbertson, Fred, Dansville.
Cummings, W. D., Fullers.
Curry, Charles, Dansville.
Curtis, Charles G., Callicoon.

D

Dady, George, North Rose.
Dady, James R., Herkimer.
Danker, Fred A., Albany.
Dansville Nursery, Dansville.
DeFloo, Henry, Rochester.
Delaware & Hudson Co., The, Plattsburg.
Demary, Jackson, Geneva, R. F. D. 1.
DeMell, Harry, Geneva, R. F. D. 1.
Denton Williams & Denton, Dansville.
Deposit Seed Co., Newark (care Jackson & Perkins Co.)
DeVyver, J. James, Bronxville.
Dickenson, J. M., Spencerport.
Dickinson, E., New Rochelle.
Dildine, S. H., Union Springs.
Dimon, Mrs. R. J., Hastings.
Diveney, John, Geneva.
Doubleday Page & Co., Garden City.
Dougherty Bros., Geneva, R. F. D.
Dougherty, Bernard, Waterloo.
Dougherty, J. J., Dansville.
Dougherty, P. H., Groveland Station.
Dougherty & Lake, Groveland Station.
Driesbach, E. J., Dansville.
Driesbach, George, Dansville.
Driesbach, J. J., Dansville.
Dryer, Wm. C., Elba.
DuFloo, John Roscoe, Sodus.
Dummett, Arthur, Inc., Mt. Vernon.
Dwyer, John E., Geneva.
Dwyer, T. J., & Co., Cornwall.

E

Eaton, George, Bath, R. F. D. 4.
Eberle, F. W., 112 South Pearl St., Albany.
Eden Nurseries, Eden Center.
Edwards, John, Dansville.
Ellis, E. E., Hamlin.
Ellwanger & Barry, Rochester.
Ellwanger, W. G., Rochester.
Elmsford Nurseries, Elmsford.
Emmons & Co., Newark.
Empie, Edgar, Sharon Springs.
Empie, Louis, Johnstown.
Empire Nursery Co., The, Geneva.
Empire State Nursery Co., Waterloo.
Engert, J. A., Webster.
Erickson, Oscar, Geneva.
Eschrich, Wm., Dansville.
Everman, Theo., Dansville.

F

Fearber, Jacob, Dansville.
Fairfield, John W., Middlesex.
Fairview Nurseries, The, Rochester.
Fairview Seed Farms, Inc., Syracuse.
Farmer, L. J., Pulaski.

Ferris, Dean, Peekskill.
Ferris, Wm. A., Hastings.
Fiddler, J. E., Hastings.
Finn's Wholesale Nurseries, Dansville.
First National Nurseries, Rochester.
Fisher, Leon, Gage.
Flushing Nurseries, Inc., Flushing.
Folger, John J., Rockville Centre.
Foord, Joseph, Auburn.
Foote, Joseph, Dansville.
Ford, Elsworth, Rye.
Ford, J. S., Pittsford.
Ford Seed Co., Newark (care Jackson & Perkins Co.).
Fordon, G. F., & Sons, Geneva.
Forscythe & Vanauken, Dansville.
Foster & Cooke, Fredonia.
Foster, E. B., Babylon.
Fowler, A. W., Brockport.
Fowler, W. J., Middlehope.
Fox, O. E., Parish.
Frankenbach, Chas. E., & Sons, Southampton.
Fraser, Samuel, Geneseo.
Frasick, S. F., East Rockaway.
Fruit Growers' Nurseries, Newark.
Fry, John, Hastings.

G

Garden City Co., Garden City.
Garden City Estates, Garden City.
Garlick, W. H., Hamden.
Gaughn, Patrick, Dansville.
Geisler, John, Geneva.
Genesee Valley Nursery, Dansville.
George, D. S., Penfield.
George, James I., Penfield.
George, Julius, Hastings.
Giffin, J. R., Newark.
Gleason, Michael, New Rochelle.
Gleason, Patrick, New Rochelle.
Gleavy, George J., Bluff Point.
Glen Bros., Inc., Rochester.
Globe Nursery, The, Geneva.
Glynn, P. H., Geneva.
Goldring, F., Slingerlands.
Goldsmith, E. F., & Sons, Irving.
Goodrich, Elmer, Middlesex.
Goodwin, Robert, Dansville.
Gould, W. M., Merrifield.
Graham Nursery Co., Rochester.
Grant Park Nursery, Hewlett.
Green's Nursery Co., Rochester.
Green, Orville D., Syracuse.
Gregory, D. E., Penn Yan.
Gregory, J. J. H., & Son, Newark (care Jackson & Perkins Co.).
Griffith, R. B., Fredonia.
Griswold Seed Co., Newark.
Grittman, Frederick S., Lynbrook.
Groden, Wm., Geneva.
Grover, Frederic E., & Co., Rochester.
Grover Nursery Co., Rochester.
Guenther, Fred, Rochester.
Guernsey, F. A., & Co., Schoharie.
Gunison, L. P., Irondequoit.
Gurney, Hiram H., & Co., (Auburn, Me.) Geneva.

H

Haddington Nursery Co., East Williston.
Haines, E. C., & Co., Inc., Bedford Hills.
Hall, L. W., & Co., Rochester.
Hallock, J. H., Penn Yan.
Halsey, Wm. F., Southampton.
Handlan & Bolger, Geneva.
Hansen, Henry, Geneva.
Harman, The M. H., Co., Geneva.
Harris, S. G., Tarrytown.
Harrison, Alfred, Irving, R. D.
Harrison, M. H., & Sons, Lebanon Springs.
Hart & Scott, Penn Yan, R. F. D. 5.
Hartman, Albert, Dansville.
Hartman, Frank M., Dansville.
Hartman, M. G., Dansville.
Hartman, N. W., Dansville.
Hartman, Wm. H., & Son, Dansville.
Hart's Lynbrook Nursery, Lynbrook.
Hassman, Wm. F., Dansville.
Hatcher, J. C., Amsterdam.
Hawks Nursery Co., Rochester.
Hayes Seed House, Newark (care Jackson & Perkins Co.)
Haberly Bros. Nurseries, Brighton.
Heinold, Chas.. Rochester.
Hempstead Plains Co., Garden City.
Henry, D. H., Geneva.
Herman, Geo., West Webster.
Herrick, Frank J., Dansville.
Herrick Seed Co., Rochester.
Hibsichwiler, Mrs. Louisa B., Lockport, R. F. D. 2.
Hicks, Isaac, & Son, Westbury.
Higgens & Wildey, Dansville.
Higgins, W. D., Whitestone.

Hill, Henry P., Penfield.
Hill, Robert, West Webster.
Hoag, Frank C., Coxsackie.
Hoag, Jonathan, Valley Falls.
Hoag, J. B., Troy.
Hoffman, H. N., Elmira.
Home Nursery Co., Rome.
Home Planters' Association, Rochester.
Hooker, C. M., & Sons, Rochester.
Hooker, Wyman & Co., Rochester.
Hornell Nursery Co., Hornell.
Hubbard, T. S., Co., Fredonia.
Hughes Bros., Dansville.
Hull, W. P., Carthage.
Hungerford, Victor, Dansville.
Huntington Nursery Co., Huntington.
Hussey, J. C., Geneva.
Huver, George, Dansville.
Hyatt, Chester A., Croton-on-Hudson.

I

Ideal Nursery Co., Irondequoit.
International Live Plant Co., Rochester.
International Nurseries, Inc., 1905 West Farms Road, New York City.
Ireland, J. J., Clarkson.
Irving Bros., Brighton.

J

Jackson, Charles A., Unadilla.
Jackson & Hassman, Dansville.
Jackson & Perkins Co., Newark.
Jamison, F. A. & A. L., Dansville.
Jantzen, John A., Hicksville.
Jeannin, John, Jr., West Sand Lake.
Jeffrey & Son, R. P., Bellmore.
Johantgen, Fred, Dansville.
Johantgen, George A., Dansville.
Jones, Wm., Geneva.
Josselyn Nursery Co., The, Fredonia.

K

Kapper, Frank, Yonkers.
Katkamier, A. B., Macedon.
Kean & Sons, B. F., Stanley, R. F. D.
Kelleher, Wm., Geneva, R. F. D. 2.
Kelleher, M. M., & Sons, Geneva.
Keller, J. M., Co., Whitestone.
Kelly, Chas. E., Newark.
Kelly Bros., Dansville.
Kennedy, Fred W., Dansville.
Kennedy, T. C., & Sons, Dansville.
Kenny, Edward, Geneva.
Kenny, John B., Jr., Geneva.
Kenyon & Wickham, Hector.
Keyel, Wm., Penfield.
King, George, Dansville.
King, Joseph C., Lebanon Springs.
King, Martin, Dansville.
King, Simon, Dansville.
King Bros., Nurseries, Dansville.
Kingsford Farms Nursery, Oswego.
Klein, Henry, Irondequoit.
Klug, George, Naples.
Knapp, Willis G., Dansville.
Knapp & Van Middlesworth, Dansville.
Knight & Bostwick, Newark.
Knight, F. E., Ripley.
Knight, George L., Rushville, R. F. D. 23.
Knight, Hickson A., Rushville, R. F. D. 23.
Knight & Struck Co., Flushing.
Kopper, G. E., Schenectady.
Kramer Bros., Farmingdale.
Krans, Clarence F., Clarence.
Kruchten, Peter, Dansville.
Krull, Wm., & Sons, Irving.
Kusneske, A. W., Fredonia.

L

Lake, D. S., & Co., Fredonia.
Lake View Nursery Co., Sheridan.
L'Amoreaux Nursery Co., Schoharie.
La Pointe Nursery Co., Geneva.
Law, Walter W., Peekskill.
Leary, Wm. T., Rochester.
Le Clare Nurseries Co., The, Rochester.
Lee, J. H., Bluff Point, R. F. D. 11.
Lenker, Charles, Freeport.
Leonard, W. S., Hilton.
Lewis & Valentine Co., East Rockaway.
Linnehan, Timothy, Geneva.
Lippincott, Miss C. H. (care Jackson & Perkins Co.), Newark.

Lisburg, George, East Hampton.
Little, T. D., & Son, Ripley.
Loomis, S. H., Geneva.
Luetchford & Connor, 509 Exchange Place Bldg., Rochester.
Lyons Nursery Co., The, Lyons.

M

McCarthy & Sons, D. T., Lockport.
McCartney, Harry, Dansville.
McClegger, Chas., Parish.
McConnell, Alexander, New Rochelle.
McCord, W. F., & Co., Tarrytown.
McDermott, Joseph, Bluff Point.
McDonnell, P., & Son, Geneva.
McGlennon & Kirby, Rochester.
McLane, F. A., Dansville.
McLane, James E., Dansville.
McLane Bros., Dansville.
McLaughlin, O. J., Dansville.
McNair, C. W., Dansville.
McNair, H. R., Dansville.
McNeil & McNeil, Dansville.
McNeil & Son, Dansville.
McNicholas, Thomas C., Geneva.
McPherson, Roy P., LeRoy.
Macedon Nurseries, Macedon.
Madson, The M. G., Seed Co., (care Jackson & Perkins Co.), Newark.
Maloney, E. H., Dansville.
Maloney, James E., Dansville.
Maloney, Thomas E., Dansville.
Maloney Bros. & Wells Co., Dansville.
Maney, Thomas J., Geneva.
Manning, W. A., Parish.
Maple Grove Nurseries, Waterloo.
Marks, Thomas, & Co., Wilson.
Marshall Bros., Dansville.
Martin, Miss Mary E., Floral Park.
Mason, Adelbert, Dansville.
Mathieu, Charles, Hastings.
Maule, Wm. Henry (care Jackson & Perkins Co.), Newark.
Maurer-Haap Co., The, Rochester.
Means, W. G., Geneva.
Menand, L., Albany.
Merrell Nursery Co., H. E., Geneva.
Mertz Bros., Dansville.
Metzler, N., Fredonia.
Miller, A. L., Jamaica.
Miller, E. Edith, Linlithgo.
Miller, E. S., Wading River.
Miller, John, Rockville Centre.
Milliot, F., Yonkers.
Mills, F. B., Co., Rose Hill.
Mills Seed Co., (care Jackson & Perkins Co.) Newark.
Milne Bros., Islip.
Miner & Miner, Sheridan.
Moll, John, Larchmont.
Moody & Sons, E., Lockport.
Mooney Bros., Dansville.
Moore Seed Co., The, (care Jackson & Perkins Co.) Newark.
Moore & Co., Wm. C., Newark.
Morehouse, Alfred G., Bluff Point.
Morey Nurseries, J. B., The, Dansville.
Morgan, Robert, Walker.
Morrison, E. E., Dansville.
Morrison, George A., Dansville.
Morse, George A., Williamson.
Mt. Pleasant Farm, Sodus.
Mowers, B., Parish.
Murphy, Cornelius, Geneva.
Murphy, W. S., Gage.

N

Nagle, John E., Dansville.
Nellis & Co., J. B., Rochester.
New York State College of Forestry, Syracuse.
New York Agricultural Experiment Station, Geneva.
Newman, Jared T., Ithaca.
Nichols, A. L., Hamlin.
Nichols, Charles A., Dansville.
Nilsson, Wm., Woodlawn.
Northport Nursery, Northport.
Northrop, King & Co., (care Jackson & Perkins Co.), Newark.
Norton & Son, J. J., Dansville.

O

O'Hara, James M., Dansville.
O'Hara Bros., Dansville.
O'Hara, Patrick, Dansville.
Olds Seed Co., L. L., (care Jackson & Perkins Co.) Newark.
Oliver, Mrs. Nettie Lewis, Lockport.
O'Loughlin, John E., Geneva, R. F. D. 2.
Ontario Nursery Co., Inc., Geneva.
Ontario Nurseries, The, Rochester.
Oram, H., Pleasantville.
Orcutt & South, Brushton.
Orleans Nurseries, Fort Plain.
Otterson, N., Hall, R. F. D. 1.
Oxford Floral Co., Oxford.

P

Pan-American Nurseries, Rochester.
Palisades Nurseries, Sparkill.
Parker, J. J., Fredonia.
Parks & Schaufelberger, Penfield.
Patchin, Dr. C. V., Dansville.
Pattington & Sons, George., Aurora.
Payne, W. E., Fredonia.
Pearce, Fred A., Geneva, R. F. D. 1.
Peck, F. W., Brocton.
Peck. H. J., & Sons. Rochester.
Peck, Robert J., Penn Yan, R. F. D. 9.
Peet & Son, J. Clinton, Webster.
Pendorf, S., New Rochelle.
Perine, J. R., Dansville.
Perry, Delmar, Penn Yan, R. F. D. 5.
Perry & Son, E. H., Fairport.
Perry, L. H., Clay.
Perry Nursery Co., Rochester.
Petersen, Anthon S., New Rochelle.
Peterson, L. S., Montrose.
Pettit, A. K., Garden City.
Philips' Sons, J. M., (care Jackson & Perkins Co.) Newark.
Pierson Co., F. R., Tarrytown.
Pine Tree State Seed Co., (care Jackson & Perkins Co.) Newark.
Platman's Sons., J. H., Gage, R. F. D. 10.
Pomeroy, Daniel N., Lockport.
Pomeroy, E. C., Bayside, L. I.
Pomeroy Nurseries, Norman, Lockport.
Poughkeepsie Nursery Co., Poughkeepsie.
Powell, George T., Ghent.
Pratt, A. D., Pittsford.
Pratt, A. Jerome, Highland.
Preston & Scofield, Holley.
Price, Geo. H., Albany.
Prospect Hill Nurseries, Inc., Castleton.
Protective Nurseries, The, Geneva.
Purdy, Fred, Keuka Park.

Q

Quick, W. J., Burtonville.

R

Race, Wm., Stanley.
Rambert & Son, John, Webster.
Randall, Alton E., Dansville.
Rauber, Joseph, Dansville.
Rauber, Paul, Dansville.
Rauber, William, Dansville.
Reed, John T., Geneva.
Reed & Schofield, Brockport.
Reilly, J. J., Groveland Station.
Reilly Bros., Nurseries, Dansville.
Reilly Nurseries, The Wm. J., Dansville.
Renison, Robert S., Westbury.
Retan, O. S., Bluff Point, Route 11.
Rhinebeck Bros., Cape Vincent.
Rice Bros., Co., Geneva.
Rice & Co., H. W., Buffalo.
Rice, T. W., Geneva.
Richland Nurseries, Rochester.
Ridgewood Nursery Co., Schenectady.
Roberts, George L., Dansville.
Roberts & Young, Dansville.
Robinson & Son, Willis H., Flint.
Rochester Board of Park Commissioners, Rochester.
Rockland Nurseries, Blauvelt.
Roesch, Lewis, Fredonia.
Roesch, M. E., Fredonia.
Rude, A. L., Colosse.
Root, George, Angola.
Root, James A., Nurseries, Skaneateles.
Rouse, Irving, Rochester.
Rowan, E. J., Dansville.
Rowan Nurseries, The James A., Dansville.
Rowe, Leon, Dansville.
Rowehl & Granz, Hicksville.
Rowland, Wm., Lyndonville.
Rowley, E. E., Dansville.
Rupert, John, Stanley.
Rupert, W. P., & Sons, Seneca.
Rush Park Seed Co., (care Jackson & Perkins Co.) Newark.
Russell, F. C., Penn Yan, R. F. D. 3.
Rye Nurseries, Rye.

S

Sackett Bros., Lebanon Springs.
Salter, W. H., Rochester.
Saxton, Roger A., Patchogue.
Schaefer, Inc., Newburgh.
Schryner, Wm., Ulster Park.
Schauber, George R., Ballston Lake.

Schifferli, F. E., Fredonia.
Schirmer, Fred, Dansville.
Schlayer, F. M., Dansville.
Schlayer & Young, Dansville.
Schmidt, F., Mt. Vernon.
Schmitz, Frederick W. O., Princess Bay, S. I.
Schneider, Ella N., East Rockaway.
Schrade, Henry, Saratoga Springs.
Schultheis, Anton, College Point.
Schwan, F. J., Dansville.
Schwingle, Herbert A., Dansville.
Scofield, R. F., Penn Yan, R. F. D. 5.
Scofield, W. F., Penn Yan, R. F. D. 5.
Scott, Joseph, Stanley.
Seneca Lake Nursery Co., Geneva.
Shafer, George, Dansville.
Shatemuc Nurseries, Barrytown.
Shearin & Son, Frank, Binghamton.
Sheerin Bros.' Nurseries, Dansville.
Sheerin's Wholesale Nurs., Dansville.
Sheflin, George, Eden, R. F. D. 2.
Sheppard, W. H., Stanley, R. F. D. 3.
Sherwood, Elmer, Odessa.
Shoemaker, Ray E., Penn Yan, R. F. D. 5.
Shum, Joseph, Rochester.
Siebrecht & Son, New Rochelle.
Sill, A. D., Hastings.
Sill, F. R., Hastings.
Simon & Christian, Dansville.
Sline, John, Geneva.
Sline, P. J., Geneva.
Smith, Carl H., Dansville.
Smith, F. R., Geneva.
Smith, E. E., Calverton.
Smith & Sons, E., Geneva.
Smith, Frank N., Dansville.
Smith, S. A., Geneva, R. F. D. 3.
Smith, W. J., Hilton.
Smith, W. & T., Co., Geneva.
Smith Bros. Seed Co., Auburn.
Sodus Fruit Farm, The, Sodus.
Southall, H. W., Bluff Point.
Spavins, H. A., Mt. Kisco.
Spicer, Mrs. Lelia, Hastings.
Sponable, A. B., Clay.
Squires & Stein, Dansville.
Stadler, Charles, Dansville.
Standard Nursery Co., Rochester.
Stanley, R. B., Odessa.
Stapleton, Lawrence, Geneva.
Stark Bros., Nurseries & Orchards Co., Dansville.
Stein, F. J., Dansville.
Stein & Noyes, Dansville.
Stevens, Chas. E., Camden.
Stockweather, L., Westfield.
Stone, George C., Dansville.
Stork, Charles H., Bluff Point R. F. D. 1.
Strever, L. F., Clay.
Strong, G. W., Sherman.
Stuart & Co., C. W., Newark.
Stuber, G. H., 233d St., N. Y. City.
Sullivan, C. J., Geneva, R. F. D.
Sunnyside Orchards and Nurseries, Schoharie.
Sutherland, Earl L., Penn Yan, R. F. D. 5.
Sutherland, G. F., Penn Yan, R. F. D. 5.
Sutherland, W. R., Penn Yan, R. F. D. 5.
Swan River Nursery, Patchogue.
Swartout, C. E., Rushville, R. F. D. 23.
Sweet Nursery Co., The George A., Dansville.
Swift Nursery Co., Dansville.
Switts Bros., Hastings.

T

Taylor, H. S., & Co., Rochester.
Taylor & Gerow, Liberty.
Teats Sons, J. H., Williamson.
Thomas Nurseries, Dansville.
Tiger, E. C. & V. S., Patchogue.
Tills, Frank R., Geneva, R. F. D. 1.
Tills, Harry H., Geneva, R. F. D. 1.
Tilton, Frank, Colosse.
Titus, Carl, Portland.
Titus, M. M., Angola.
Trautman, Geo., Jr., Geneva.
Traver, Bertsall, Bluff Point.
Troy, J. H., New Rochelle.
True Bros., Adams Basin.
Turner, J. K., & Sons, Gage, R. F. D. 10.

U

Udell, Mrs. Foster, & Sons, Brockport.
Uhl, Jacob, Dansville.
Ullyette Bros., Dansville.
United Forestry Co., The, Niverville.
Universal Nurseries, Geneva.

V

Van Der Meulen, T. F., Dunkirk.
Van Dusen Nurseries, The, Geneva.
Van Eps, F. E., Stanley.
Van Gaasbeck, C. H., Chemung.
Van Inwagen, C. L., Newark.
Vanordan, C. W., Walker.
Van Vlake, D. S., Rheims.
Van Vranken's Sons, Abram, Rexford.
Velie, C. G., & Sons, Marlboro.
Vetault, Louis, East Hampton.
Vick's Sons, James, Rochester.
Vick & Hill Co., Rochester.
Vogt, J. W., Dansville.
Vogt, R. W., Skaneateles.

W

Wade, Thomas J., New Rochelle.
Wagner, Charles E., Dansville.
Wagner, Henry P., Mt. Vernon.
Waldo, W. S. & Co., Rochester.
Wambach, George A., Irondequoit.
Ward, Mrs. L. A. C., Wyoming.
Weber, Charles, Lynbrook.
Weeks, Clarence H., Lyons.
Weis, Frank, Spencerport.
Welch, James, Brockport.
Welch, L. K., Dansville.
Welch, Patrick, Waterloo.
Welch, W. B., North Rose.
Wells, F. W., Wholesale Nurseries, Dansville.
Wells, S. J., & Son, Fayetteville.
Welsh, James, Geneva.
Welsh, John P., Geneva.
West Sayville Nursery, West Sayville.
Western New York Co., Rochester.
Weston, Henry, Hempstead.
White, Miss Emma V., (care Jackson & Perkins Co.) Newark.
White, Harry, Dansville.
Whiteman, E. L., Dansville.
Whiteman, Milton, Dansville.
White Plains Nurseries, White Plains.
Whiting Nursery Co., (Boston, Mass.) Geneva.
Wickham, Geo. A., Stanley, R. F. D. 3.
Wiley, H. S., & Sons, Cayuga.
Will, William, Forestville, R. D.
Willard, C. E., Hornell.
Willett & Wheelock, North Collins.
Willey, Charles, East Patchogue.
William Street Nurseries, Geneva.
Williams, Miss Rose, Newark.
Williams, G. P., Amityville.
Williams, The Ira, Co., Jamestown.
Wilson, H. E., Rochester.
Wilson, R. P., & Son, Williamson.
Wilson, W. R., Corning, R. F. D.
Winters, John C., & Sons, Brandt.
Wood, Allen L., Rochester.
Wood, Harmon, Co., Brooklyn.
Wood, J., Knowelsville.
Wood, James, Dansville.
Wood Bros., Fishkill.
Woolson, Geo. C., Hastings.
Worden, Mont., Fayetteville.
Wright, E. M., Geneva.
Wright, H. W., & Son, Webster.
Wright, N. W., Hastings.
Wyatt Bros., Geneva.
Wygant, J. Foster, Marlboro.
Wyman Nurseries, The, Rochester.

Y

Yonkers Nursery Co., Yonkers.
Young, Charles S., Geneva.
Young, T. F., Marion.

Z

Zeller, Chas., & Son, Brooklyn.
Zerfass, Byron A., Dansville.
Zimmerman Seed Co., (care Jackson & Perkins Co.) Newark.
Zuber, V., & Sons, Whitestone.

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DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 103

The Inspection, Certification and Transportation of NURSERY STOCK In New York State, Other States and Canada

(Corrected September, 1914)

1914

Prepared by
GEORGE G. ATWOOD, D. Sc.
Chief, Bureau of Horticulture and Nursery Inspection

INSPECTION, CERTIFICATION AND TRANSPORTATION OF NURSERY STOCK

INTRODUCTION

This bulletin gives a brief synopsis of the laws and regulations of the United States, the several States and Canada relative to the inspection, certification and transportation of nursery stock.

Special attention of transportation companies, importers, custom house brokers, dealers and nurserymen is called to sections 304 and 305 of the Agricultural Law and to the following orders of the Commissioner of Agriculture. No person in the State of New York should handle or ship nursery stock until he becomes familiar with the provisions of the law relative thereto.

A NEW LAW

Chapter 367 of the Laws of 1914 provides for a proper and accurate labeling of trees; it extends the period during which an action may be brought to recover damages by reason of trees proving untrue to name as labeled; it requires the purchaser to notify the nurseryman as soon as he has any reason to believe that his trees are not true to name. It provides that any contract which is intended to limit the liability of the nurseryman shall be in writing, and if not in writing the burden of proof shall be on the nurseryman. It provides that the purchaser may ascertain, if he desires, the locality in which his trees were propagated and grown, and the age of the trees when delivered to him; it provides that the purchaser must notify the nurseryman promptly if he finds any error has been made in filling his order. It provides that a nursery agent must carry a certificate of agency from his employer, and that the agent must leave with the purchaser a copy of the contract covering the sale.

This act takes effect September 1, 1914.

ORDERS

ALBANY, N. Y., *September* 1, 1914.

To Whom It May Concern:

By virtue of authority conferred on me by section 305 of the Agricultural Law, I, Calvin J. Huson, Commissioner of Agriculture, hereby issue the following orders:

TO TRANSPORTATION COMPANIES AND THEIR AGENTS

All nursery stock shipped from any point in the State of New York must have attached to each car, box, bale or package a copy of a certificate of inspection issued by the State Department of Agriculture, signed by the Commissioner of Agriculture and valid to September 1, 1915.

All transportation companies bringing nursery stock into this State shall immediately notify the Commissioner of Agriculture of the fact that such stock is in their possession or is en route to some point within the State, and give name of consignor and consignee and the points of shipment and destination of each consignment, and shall also make such further report relative to shipments as the Commissioner of Agriculture may from time to time require.

(Sample forms of notices will be sent on application.)

TO IMPORTERS OF NURSERY STOCK AND CUSTOM HOUSE BROKERS

All custom house brokers, bringing into or causing to be brought into this State any nursery stock shall file with the Commissioner of Agriculture, on or before October first each year, the name of the person, firm, association or corporation engaged in or intending to engage in such business, together with the business address of such person, firm, association or corporation.

Custom house brokers importing or bringing nursery stock into the State shall immediately, upon receiving consignments, notify the Commissioner of Agriculture of the fact that such consignments are in their possession or en route to some point within the State and give the name and address of the consignor and consignee and the destination of each shipment and the name of the transportation company bringing such stock and the route over which it is brought, and shall also make such further report relative to shipments as the Commissioner of Agriculture may from time to time require.

(Blanks will be furnished for this purpose.)

TO DEALERS IN NURSERY STOCK

All dealers in nursery stock must. if they have no growing nursery stock in this State, file with the Commissioner of Agriculture their name and address, together with a list of all persons, firms or corporations of whom they buy nursery stock. No stock shall be sold, shipped or delivered unless accompanied by a copy of a certificate signed by the Commissioner of Agriculture or his authorized representative, indicating freedom from insect pests and fungous diseases. When all such stock is collected an inspection will be made and proper certificates provided by this Department to permit shipping.

TO NURSERYMEN

All growing nursery stock in the State will be inspected annually or oftener if necessary; if found free from injurious insects or fungous disease there will be issued to the owner a certificate of inspection, which certificate will expire September 1, 1915.

Every car, box, bundle or package must have attached an exact copy (including date of issue and date of expiration) of said certificate before shipment or delivery.

All nursery stock found growing within one-half mile of areas infested with San José scale must be properly fumigated as required by the regulations of this Department before shipment or delivery.

No nursery stock received from points within the State of New York shall be sold or delivered unless it bears a valid certificate of inspection on arrival.

Any nursery stock brought into the State must remain packed and unopened until permission is given by the Commissioner of Agriculture or his duly authorized representative. To facilitate rapid inspection, receivers of nursery stock should notify the Department office at Albany or an authorized inspector of the receipt or expected receipt of consignments, giving the name and address of consignor and dates.

No nursery stock shall be shipped or delivered unless there is positive evidence that it has been inspected and certified by authority of the Commissioner of Agriculture.

(Signed) Calvin J. Huson,
Commissioner of Agriculture.

September 1, 1914.

INFORMATION

The State is divided into districts and the nurseries are under the constant care of inspectors of the Department. During the shipping season it is the duty of the Department to cause an inspection of all nursery stock received from points outside the

State. All trees infested with San José scale or other injurious insects, and all trees and plants infected with fungous diseases, crown gall or galls on the roots, must be destroyed or returned to shippers.

The Commissioner of Agriculture exempts from fumigation all herbaceous plants, conifers, greenhouse plants, flowers and cuttings, but this does not refer to stock that may distribute injurious pests or disease. Certificates issued by this Department will be valid until September 1, 1915. No certificate will be granted on a final inspection made earlier than August 1, 1914, and the most important inspection work will be done after August 1 and continue throughout the year wherever it is found necessary.

Vineyardists who make a business of selling cuttings and small fruit growers who do no general nursery business will receive a special certificate of inspection. Transportation companies class cuttings as nursery stock and require copies of inspection certificates.

Duplicate certificates of inspection will be furnished by the Department for filing in the offices of the States requiring them, as follows:

Alabama, Arkansas, Florida, Georgia, Illinois, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, North Carolina, North Dakota, Rhode Island, South Carolina, Tennessee, Texas, Virginia, Wisconsin and Wyoming.

To avoid delay and possible loss of stock, no nurseryman should ship to another State, without first having learned the requirements of that State.

All persons who intend to import trees or plants from any foreign country should first apply for and receive a permit from the Federal Horticultural Board, U. S. Department of Agriculture, Washington, D. C.

The following is a copy of order 6313 of Postmaster-General, dated May 29, 1912, amending paragraph 8, section 496 of postal laws and regulations, to read as follows:

"Nursery stock, including florists' stock, trees, shrubs, plants, vines, cuttings, grafts, scions, buds, bulbs and roots (which may carry injurious insects), may be admitted to the mails only when accompanied by a certificate from a State or Government inspector to the effect that the nursery from which said nursery stock is shipped has within a year been inspected and found free from injurious insects."

The following is a brief summary of the laws and regulations of the several States and Canada, governing the inspection, certification and transportation of nursery stock.

For fuller information correspondents are referred to the officials who have charge of the work in the several States.

ALABAMA.— Nurseries in the State are inspected annually. Certificates expire July 15. Unlawful to sell, transport, or deliver trees or plants known to be infested with plant diseases of insect pests. Every package, and separate order, of nursery stock, etc., delivered in the State must bear the inspection tag of the State Horticulturist of Alabama and show the address of shipper, and consignee.

Quarantine in force against citrus trifoliata seedlings. Other citrus stock may be shipped from other states, only upon special permits issued by the State Horticulturist of Alabama. All such stock must be defoliated, and properly fumigated with hydrocyanic acid gas before shipment in the State, or from without.

A signed copy of the inspection certificate issued to the applicant must be filed with the State Horticulturist and money sent to pay for the license and tags needed.

Printed official tags are furnished at cost.

First one hundred, $.65, postpaid. Per thousand, $2.20, sent by express, collect. Use money order or draft.

Every nursery and dealer in Alabama and all outside nurseries doing business in Alabama shall be required to take out license before a certificate of inspection is granted. The license shall be of two kinds: (1) regular nurseryman and dealer's license, and (2) an agent's license, the agent's license to be obtained only through the principal, who must hold a regular nurseryman's or dealer's license. Fee for each nurseryman's or dealer's license shall be ten dollars ($10.00). For each agent's license ($1.00). All license fees to be paid before the license is granted.

Address all communications to State Horticulturist, Auburn, Ala.

ARIZONA.— Nursery stock shipped into the State must be prominently labeled with the name and the address of both the shipper and the consignee, and must be accompanied by a valid certificate of inspection or a copy of such certificate by a duly authorized inspection official. Shipments into the State, consisting of or containing plants not grown in the locality from which shipment was made, must, in addition, specify where such plants were grown. State quarantine orders of interest to nurserymen prohibit: (1) the importation of stock from sections infested by the alfalfa weevil; (2) the importation of citrus, privets, cape jessamine and rubber trees and plants from North and South Carolina and all States bordering on the Gulf of Mexico; (3) rooted grape vines from north of the north line of San Bernardino, Kern and San Luis Obispo counties, California, and (4) citrus trees from California, except from Imperial, Tulare and Fresno counties. All shipments of living plants into the State of Arizona are inspected by Arizona State inspectors and not delivered until a certificate of release is issued in each case, to the common carrier and to the consignee. If trees or plants are infested or infected with insect pests or plant diseases of general occurrence in the section of the State where the shipment is received, treatment to eradicate, or the separation of the infested or diseased plants or trees, is in most cases permissible; otherwise all plants or trees of the kind found to be infested or diseased are held in quarantine and are shipped from the State or destroyed at the owner's option. Copies of quarantine orders furnished upon application.

Dr. A. W. Morrill,
State Entomologist.

ARKANSAS.— Shipments of nursery stock into the State must be accompanied by a copy of the valid certificate of inspection, a copy of the valid permit issued to the nurseryman by the State Entomologist of this State and must bear the name and address of the consignor and consignee with a statement of the contents of the shipment; all shipments not so labeled or tagged must be refused for shipment by the carrier. Carriers bringing into the State shipments of nursery stock which originated in foreign countries or foreign possessions of the United States must notify the State Entomologist in writing and must hold such stock at any place designated by him until the same has been duly inspected and released.

Nurserymen located out of the State may secure permits by filing with the State Entomologist a copy of their certificate. Geo. G. Becker, State Entomologist, Fayetteville, Ark.

CALIFORNIA.— Shipments of nursery stock into California are held by transportation companies until inspected by the State officials. All packages must be marked with the name and address of the shipper, name of the consignor and the name of the place where the stock is going. Peach, apricot and almond trees from districts where yellows and rosette are known to exist shall be refused entry and shall be destroyed or returned to the shipper. Notice of shipment of nursery stock to California should be sent to the following address, and also to the Quarantine Guardians at the point of destination.

FREDERICK MASKEW,
Chief Deputy, Quarantine Office,
Room 11, Ferry Building,
San Francisco, Cal.

COLORADO.—The State Entomologist has general supervision of the inspection of nurseries and orchards to prevent the introduction and spread of injurious insects and plant diseases. County horticultural inspectors in fruit-growing counties of the State are appointed by the county commissioners. All nursery stock coming into the State must bear certificates of inspection and fumigation and on arrival in counties that have inspectors is turned over to them and released to consignee if it passes inspection. C. P. Gillette, State Entomologist, Fort Collins, Colo.

CONNECTICUT.—"All nursery stock shipped into this State shall bear on each package a certificate that the contents of said package have been inspected by a State or government officer and that said contents appear free from all dangerous insects and diseases. If nursery stock is brought into the State without such a certificate, the express, freight, or other transportation company or person shall, before delivering shipment to consignee, notify the State Entomologist of the facts, giving name and address of consignee, origin of shipment, and approximate number of cars, boxes, or packages, and probable date of the delivery to the consignee. The State Entomologist may cause the inspection and if infested the treatment of the stock. No person, firm, or corporation shall unpack any woody field-grown nursery or florists' stock brought into this State from foreign countries except in the presence of an inspector, unless given permission to do so by said State Entomologist or one of his deputies. If such stock is found infested with any dangerous pests the State Entomologist may at his discretion order it treated. Any person violating any of the provisions of this act shall be fined not more than $50." Dr. W. E. Britton, State Entomologist, New Haven, Conn.

DELAWARE.— Shipments of nursery stock into the State must bear a certificate of inspection and also a certificate stating that the stock has been properly fumigated. All nursery stock not accompanied by proper certificates may be held by the transportation companies until it can be inspected. Wesley Webb, Secretary, State Board of Agriculture, Dover, Del.

FLORIDA.—All nursery stock shipped into Florida shall be defoliated and fumigated and to each package shall be conspicuously attached a permit certificate. This permit shall be issued free of charge in exchange for an approved certificate issued by the official in the State of origin. Printed tags must be used in making shipments and can be obtained at the following address. Duplicate certificates issued to nurserymen in New York State must be filed in Florida. Inspector of Nursery Stock, Gainesville, Fla.

GEORGIA.— Nurseries are inspected annually. A signed duplicate of inspection certificate, together with a statement by the nurserymen that all stock intended for Georgia will be fumigated in accordance with directions furnished them, must be filed in the office of the State Entomologist. Official tags of the Georgia State Board of Entomology will be furnished through the State Entomologist at the following prices: One hundred tags, 60 cents, postpaid; 200 tags, 85 cents, postpaid; 300 tags, $1.10, postpaid; 500 tags, $1.35, sent by express, collect; 1,000 tags, $2, sent by express, collect. Each shipment of nursery stock into the State of Georgia must bear the official tag of the Georgia State Board of Entomology and also a duplicate certificate of inspection of the State from which the shipment is made. Prof. E. L. Worsham, State Entomologist, Atlanta, Ga.

IDAHO.— No person, firm or corporation shall import or sell nursery stock without first applying to the State Board of Horticultural Inspection and filing a bond in the sum of $5,000 and securing annual license upon payment of $10. Shipments into the State should bear a copy of an official certificate of fumigation emanating from the place where the stock was grown. All shipments into the State must bear a label showing the name of the shipper, the locality where grown and variety of nursery stock. All nursery stock, fruit trees or horticultural plants sold or delivered by principal or agents shall be true to name and variety as represented. All nursery stock shipped into this State, whether bearing certificate of inspection or not, must be inspected again upon its arrival, the consignee paying for such inspection. Every nursery firm doing business in this State must pay annually $1 additional for each agent who represents them. C. K. Macey, State Horticultural Inspector, Boise, Idaho.

ILLINOIS.— State nurseries are inspected and certified not later than October 1. An inspection certificate shall be valid for one year from date of inspection. The State Entomologist is authorized to revoke a certificate if he finds it is being used in violation of the law. He is also required to furnish all Illinois nurserymen with a list of State and government inspectors whose certificates may be received as equivalent to his own, and the nurserymen receiving stock under such certificates is authorized to substitute for them the Illinois certificate of inspection. Each dealer in nursery stock who has no nursery of his own and each agent for a nursery located outside of Illinois is required to furnish to the State Entomologist annually a sworn statement, showing that the stock in which he deals has been duly inspected and to submit for approval a copy of the certificate of inspection. Nursery stock shipped into the State must bear a certificate of inspection attached to each car, box, bale, bundle or package. Dr. S. A. Forbes, State Entomologist; P. A. Glenn, Chief Inspector, Urbana, Ill.

INDIANA.—All nurseries are inspected between June 1 and October 1 and at such other times as the head of the inspection department may consider advisable. Stock sent into or within the State must be plainly labeled with the name of the consignor and the consignee and must bear a certificate signed by a State or government official showing that the inclosed stock has been inspected and found free from injurious insects and plant diseases. All foreign-grown stock must be inspected upon arrival at its destination in Indiana. C. H. Baldwin, State Entomologist, Indianapolis, Ind.

IOWA.— State nurseries are inspected at owner's request or if supposed to be infested with dangerous injurious insects or plant disease, and nurserymen are prohibited from selling or shipping without inspection. Shipments into the State must be accompanied by a certificate of apparent freedom from injurious insects or plant diseases. A copy of inspection certificate must be filed with and approved by the State Entomologist. Prof. H. E. Summers, State Entomologist, Ames, Iowa.

KANSAS.— Nurseries are inspected annually between June 15 and November 1. Certificates are valid until the first day of the following June. No nursery stock shall be brought into the State nor offered for sale within the State without having been properly inspected as shown by an accompanying certificate. State Entomological Commission, Topeka, Kan. Prof. Geo. A. Dean, Entomologist, Manhattan, Kan. Prof. S. J. Hunter, Entomologist, Lawrence, Kan.

KENTUCKY.— Nurseries are inspected annually. Every package of nursery stock shipped into the State must have a copy of a certificate of inspection attached and bear on the label a list of the contents. Duplicate certificates of inspection may be filed with the State Entomologist. Prof. H. Garman, State Entomologist, Lexington, Ky.

LOUISIANA.— Nursery inspection is under the control of the State Board of Agriculture and Immigration. The entomologist of the experiment station will have charge of the work, so all communications concerning nursery inspection should be addressed to him.

The regulations of the Board require every box, bundle, bale or package of nursery stock shipped into the State to be plainly labeled with a copy of a valid and unexpired certificate of inspection, and nurserymen shipping stock into this State must file a copy of their certificate with the Board. E. S. Tucker, Entomologist, State Board of Agriculture and Immigration, Baton Rouge, La.

MAINE.—All nursery stock shipped into the State shall bear on each box or package a certificate that the contents have been inspected. The State Horticulturist has power to inspect at point of destination all stock entering the State. No person, excepting growers, shall carry on the business of selling nursery stock or soliciting purchases without first obtaining a license. The license fee shall be $5 per annum. The license shall be issued in the name of the dealer, salesman or agent as the case may be. A. K. Gardner, Horticulturist, Department of Agriculture, Augusta, Me.

MARYLAND.— Nurseries are inspected at least once in six months. All nursery stock subject to attack of insect pests must be fumigated. Shipments into the State must be labeled with the name of consignor and consignee and each package bear a certificate of inspection. Duplicate certificates should be filed with the State Entomologist. Dr. T. B. Symons, State Entomologist; Prof. J. B. S. Norton, State Pathologist, College Park, Md.

MASSACHUSETTS.— Nurseries in the State are inspected annually. Agents or other persons, excepting growers, who desire to sell nursery stock in the State shall make application to and receive from the State Nursery Inspector an agent's license, and shall file with the State Nursery Inspector names and addresses of all persons or nurseries from whom they purchase stock. It shall be unlawful for any person, firm or corporation to sell, deliver or ship within the State any nursery stock unless such person, firm or corporation holds a grower's certificate or an agent's license, and a copy of such certificate or license must accompany each car, box or package delivered or shipped.

The State Nursery Inspector shall have power to inspect at its point of destination all nursery stock coming into the State, and should such stock be found to be infested with injurious insects or plant diseases he may cause it to be destroyed, or treated or returned to the consignor at the consignor's expense. Dr. H. T. Fernald, State Nursery Inspector, Amherst, Mass.

MICHIGAN.— Nurseries are subject to inspection; infested trees must be destroyed and the remainder of the stock within a half mile must be fumigated. Shipments into the State must bear on every package, plainly labeled, the name of the consignor and consignee, statement of contents and a certificate showing that the contents have been inspected by a State or Government officer, and if of species subject to the attack of San José scale must be fumigated with hydrocyanic acid gas. Certificates of fumigation must also be attached, together with a copy of the certificate of inspection. This applies to individual orders when several are contained in the same shipment. All nurserymen, whether residents of Michigan or other States, who wish to grow or sell stock within the State must apply to the State inspector of nurseries on or before August 1 of each year for a license, for which the fee is $5. A bond for $1,000 must also be filed. Certificates of inspection must be filed with the State inspector of nurseries before any stock is shipped into the State. Prof. L. R. Taft, State Inspector of Nurseries and Orchards, East Lansing, Mich.

MINNESOTA.— Inspection, annual compulsory. Inspection may be oftener if it seems desirable.

Shipments into the State must be accompanied by a certificate of inspection.

Carrying companies accepting stock not so tagged are responsible and liable to prosecution.

Dealers in other States sending stock into Minnesota for sale must file a copy of their certificates with the State Entomologist. Prof. F. L. Washburn, State Entomologist, St. Anthony Park, Minn.

MISSISSIPPI.— Every nursery in the State must be inspected before November 1 of each year, and every bundle, bale or package of stock sold or transported must be accompanied by a copy of the certificate of inspection attached in a conspicuous place. Every person or firm from other States wishing to ship nursery stock into Mississippi must file with the entomologist a copy of their certificate which shall state that the nursery is properly equipped for fumigating all nursery stock. A copy of the certificate shall be attached to every bundle, bale or package of nursery stock delivered within the State. Every nurseryman must state that all nursery stock shipped into this State will be fumigated with hydrocyanic acid gas. R. W. Harned, Entomologist, Agricultural College, Miss.

MISSOURI.— Nurseries are inspected annually. Each nursery outside of Missouri shipping stock into Missouri must apply at the office of the Chief Inspector for a permit which will be issued upon filing the necessary papers and copy of their nursery inspection certificate. No fee is charged for the permit. All agents or salesmen for outside nurseries must apply for an agent's permit. Every package of nursery stock shipped into the State must be clearly labeled with the name of the consignor, consignee, statement of contents and a certificate showing that the stock therein contained has been inspected where grown by a duly authorized inspector and found to be apparently free from dangerously injurious insect pests and plant diseases. The transportation companies are not permitted to deliver nursery stock unless so labeled. Leonard Haseman, Entomologist and Chief Inspector, University of Missouri, Columbia, Mo.

MONTANA.—All stock brought into the State must be unpacked, inspected and fumigated if necessary at one of the designated quarantine stations, viz.: Glendive, Miles City, Billings, Bozeman, Lewistown, Helena, Great Falls, Missoula, Victor, Como, Darby, Plains, Mondak, Glasgow, Havre, Kalispell, and Eureka. Nursery stock may be inspected and fumigated at other points of delivery on payment of all costs. All correspondence and notice of shipment, including an invoice of stock, must be sent to M. L. Dean, State Horticulturist, Missoula, Mont.

NEBRASKA.—All nursery stock shipped into the State shall be labeled with the names of consignor and consignee and a certificate showing inspection since July first preceding. Prof. Lawrence Bruner, State Entomologist, or Prof. Myron H. Swenk, Assistant State Entomologist, University of Nebraska, Lincoln, Neb. Leroy M. Gates, Field Entomologist.

NEVADA.— Nursery stock shipped from other States shall bear on the outside of each car, bale or package a label giving the names of the consignor and consignee, together with a copy of an inspection certificate of recent date. Such certificate of inspection must bear the signature of a qualified person in authority in the State in which such nursery stock was grown. No transportation company shall deliver any nursery stock lacking such official certificate of inspection. S. B. Doten, Director, Experiment Station, Reno, Nevada.

NEW HAMPSHIRE.— Nurseries are inspected at least once each year. Shipments into the State must be accompanied by a certificate of inspection or, in lieu thereof, an affidavit showing that the stock has been fumigated with hydrocyanic acid gas, using not less than 2/10 of 1 gram of cyanide of potassium per cubic foot of space, in an air-tight compartment for not less than 40 minutes. A copy of the certificate of inspection or a copy of the affidavit must be attached to each car, box or package shipped into the State. Hon. Andrew L. Felker, Commissioner of Agriculture, Durham, N. H.

NEW JERSEY.— The State law requires the inspection of all nurseries at least once in each year. Shipments into the State must be accompanied by a certificate of inspection, or copy thereof, attached to each car or parcel, together with a statement from the shipper that the stock therein is a part of the stock inspected, and stating whether such stock has been fumigated with hydrocyanic acid gas or not. It shall be the duty of all carriers to refuse for transportation within the State all stock not accompanied by a certificate of inspection.

All stock coming into the State may be detained for examination, wherever found, by the State Entomologist or the State Plant Pathologist, and if found to be infested with any insects or plant diseases, injurious or liable to become so, will be destroyed. Dr. T. J. Headlee, State Entomologist, New Brunswick, N. J.; Dr. M. T. Cook, State Plant Pathologist, New Brunswick, N. J.

NEW MEXICO.— No law relative to transportation of nursery stock. The Territorial Legislature of 1903 provided for county boards of horticultural commissioners which were given authority to control orchard pests. Prof. Fabian Garcia, Horticulturist, Agricultural Experiment Station, State College, N. M.

NEW YORK.— See pages 3, 4, 5, 6.

NORTH CAROLINA.— Every shipment of nursery stock into this State must be accompanied by a valid copy of a certificate of inspection. Every person, firm or corporation desiring to ship nursery stock into this State must file a copy of their certificate with the entomologist. It will be of advantage to the nurserymen if they attach a guarantee of fumigation to the shipment. A copy of regulations will be sent on application. Franklin Sherman, Jr., Entomologist, State Department of Agriculture, Raleigh, N. C.

NORTH DAKOTA.— The director of the Experiment Station is authorized to cause inspection and prescribe treatment of diseased nursery stock. Shipments into the State must bear a certificate of inspection. Every person who employs agents or salesmen or who solicits for the sale of nursery stock must obtain a license upon the payment of $10 and upon filing a certificate of inspection and a $500 bond. Said license will permit holder to do business in the State for one year. Director North Dakota Experiment Station, Agricultural College, N. D.

OHIO.— Shipments of nursery stock entering the State must bear the name of the consignor and consignee and be accompanied by an official certificate of inspection or fumigation. Transportation companies are required to notify the Agricultural Commission of all shipments of nursery stock entering the State. Agents are required to pay a license fee of $1 and dealers a license fee of $5 also to file sworn statements that the stock which they sell or deliver has been officially inspected and was received by them accompanied with a valid certificate of inspection or fumigation. The Agricultural Commission of Ohio, N. E. Shaw, Chief Inspector, Columbus, Ohio.

OKLAHOMA.— Nurseries are inspected annually. No nursery stock shall be brought into the State without having been previously properly inspected as shown by an accompanying certificate. Benjamin Hennessy, Secretary, State Entomological Commission, Oklahoma City, Okla.

OREGON.— The State Board of Horticulture has charge of inspection within the State. All nursery stock brought into the State must be inspected at station of delivery before delivery to consignee. If found infected or infested, nursery stock must be returned to consignor or destroyed. Peach pits, peach trees and scions and other trees on peach roots grown in or coming from districts where peach yellows, little peach or peach rosette are known to exist, are prohibited entry. Every carload and case containing nursery stock, trees, plants, etc., must have plainly marked thereon in a conspicuous manner and place the name and address of consignor; name and address of consignee; name of country, State or Territory where contents were grown and must show that it contains nursery stock, seedlings or seeds. Address State Board of Horticulture, Portland, Oregon.

PENNSYLVANIA.— Nurseries must be inspected at least once a year, and no nurseryman, agent, dealer or broker can legally sell or ship stock without a certificate of inspection. Certificates of fumigation are required to accompany shipments from other States, and the word "fumigated" printed or stencilled on or accompanying the certificate of inspection will not be accepted unless it is apparent that such word is a part of the certificate granted by a State inspection officer.

Nurserymen from other States are required to file affidavits that all nursery stock of kinds subject to infestation by San José scale will be properly fumigated before shipment into the State. Blanks furnished upon application. Dealers in nursery stock are granted certificates upon application and the filing of a statement that they will buy nursery stock only from nurserymen or growers holding valid certificates of inspection.

Transportation companies are required to reject all stock entering the State unless certificates of inspection and fumigation are attached. Prof. H. A. Surface, Economic Zoologist; Enos B. Engle, Chief Nursery Inspector, Harrisburg, Pa.

RHODE ISLAND.— The Inspection Law now provides that the State Board of Agriculture shall appoint a State Entomologist whose duties it shall be to inspect nurseries and orchards and to grant an annual certificate for sale of nursery stock. All nursery stock shipped into the State must bear on each package a certificate that the contents have been inspected by an authorized inspection officer. The State Entomologist is, furthermore, authorized to inspect any nursery stock which comes into the State, even when sent in under an official certificate, if he deems it advisable, and shall order its return to the consignor if any injurious insects or plant diseases are found therein.

An affidavit of fumigation is no longer accepted in lieu of official inspection.

Agents who have no nursery, and who wish to sell nursery stock within the State, must apply to the State Entomologist for an agent's license and must state where they propose to purchase their stock to be sold. A. E. Stene, State Entomologist, Kingston, R. I.

SOUTH CAROLINA.— Stock coming from other States, provinces or foreign countries and consigned to points within this State must have attached to every bundle or package an interstate tag or permit issued by the South Carolina Crop Pest Commission. This interstate tag or permit can be issued only after the certificate of inspection of the State, country or province where shipment originated has been approved by the South Carolina State Crop Pest Commission and filed in the office of the entomologist or pathologist of the said commission. It is further required that the fumigation certificate of the South Carolina State Crop Pest Commission is properly filled out and filed in the office of the entomologist or pathologist of the commission before the interstate tag or permit can be issued, unless the official inspection certificate includes a statement that the nursery is properly equipped for fumigating. Prof. A. F. Conradi, State Entomologist; Prof. H. W. Barre, State Pathologist, Clemson College, S. C.

SOUTH DAKOTA.—All nursery stock shipped into the State must be accompanied by a certificate of inspection issued by the State Entomologist of the State from which it was shipped. Any person, firm or corporation owning a nursery which sells stock to be delivered in this State must certify where the stock was grown and attach this statement to all shipments. Prof. N. E. Hansen, Secretary of the Horticultural Society, Brookings, S. D., and Harry C. Severin, State Entomologist.

TENNESSEE.— Nurseries are inspected annually or oftener if necessary. Any person, firm or corporation without the State, desiring to do business within the State, shall file with the State Entomologist and Plant Pathologist a copy of his certificate of inspection issued and signed by proper official of his State, as well as an agreement to fumigate properly all stock shipped into the State. Every shipment must be accompanied by a copy of said certificate of inspection and a fumigation tag. Every individual sale or bill of trees shall bear a copy of certificate. Failure to comply with the requirements subject stock to confiscation.

Prof. G. M. Bentley, State Entomologist and Plant Pathologist, Knoxville, Tenn.

TEXAS.— Nurseries and greenhouses are inspected annually. All shipments of nursery stock originating outside the State must bear shipping tags showing copy of certificate of inspection from the State inspector of the State in which the shipment originates, but in addition thereto they must have a tag attached showing copy of permit from Texas. No nursery stock shall be shipped into the State without first filing with the commissioner of agriculture a certified copy of a certificate of inspection from the State inspector of the State in which the shipment originates. A fee of $5 is required for issuance of permit to ship into the State. Agents or dealers operating in Texas for nurserymen outside of the State must procure proper agents, credentials from their nurseries, on an approved form. Sam. H. Dixon, Chief Inspector, Houston, Tex.

UTAH.— No person shall engage in the business of selling or importing nursery stock without having first obtained a license to do business in the State. Any person may obtain a license from the State Horticultural Commission upon the payment of a fee of $2.50 annually and by filing with the State Horticultural Commission a bond in the sum of $500. Each salesman or agent must hold a certificate giving his name and the name and address of the persons he represents, together with the license number of his principal. A copy of the certificate of inspection must be attached to each shipment. All nursery stock will be quarantined on arrival and, if deemed necessary, disinfected or destroyed at the cost of the owner. J. Edward Taylor, State Horticultural Inspector, Salt Lake City, Utah.

VERMONT.— Nurseries are inspected annually. Nursery stock shipped into the State shall be accompanied by a certificate of inspection and the name and post-office address of the consignor and consignee. M. B. Cummings, State Nursery Inspector, Burlington, Vt.

VIRGINIA.—Before selling nursery stock, it is necessary to procure from the auditor of public accounts, Richmond, Virginia, a certificate of registration for which the fee is $20 for principals, duplicates for agents' use free. Send certified check or draft for $20 drawn or indorsed payable to the Treasurer of Virginia. (Personal checks will not be accepted.) Duplicate of certificate of nursery inspection must be filed with the State Entomologist, who will furnish tags at cost, and one tag must be attached to each package of stock to be sold in the State. W. J. Schoene, State Entomologist, Blacksburg, Va.

WASHINGTON.— No person shall sell or distribute nursery stock or solicit for sale without first obtaining a license to conduct business in the State. All licenses run for one year from the date of issue. The license fee shall be $5 per annum for nurserymen and tree dealers, and $1 per annum for agents. Each licensed nurseryman and tree dealer must execute a bond in the sum of $1,000; the bond requires a compliance with the State laws and also that all nursery stock covered by such license shall be true to name and variety.

The State is divided into horticultural districts and a supervisor is in charge of each district. All shippers of nursery stock into the State must give notice of his intention to ship and a copy of such notice shall be mailed to the district horticultural inspector. (1913.) T. O. Morrison, Assistant Commissioner of Agriculture, Division of Horticulture, Olympia, Wash.

WEST VIRGINIA.— The State Crop Pest Commission has power to provide quarantine regulations concerning the transportation and sale of nursery stock. No person or corporation either for himself or as agent for another shall offer for sale, sell or deliver nursery stock unless he shall have first procured from the State Auditor a certificate of registration, the annual fee for which is $5. All nursery stock entering the State must be accompanied by a certificate of inspection and also by an official permit tag obtained from the State Entomologist. W. E. Rumsey, State Entomologist, Morgantown, W. Va.

WISCONSIN.— All persons, firms or corporations shipping nursery stock into the State are required to file a duplicate certificate of inspection, and secure a State license at the cost of $5, if selling at retail or through agents. Each shipment must bear certificate tags which shall be attached to each package, box or carload lot. Transportation companies are forbidden to deliver nursery stock unless accompanied by valid certificate tags. All agents selling nursery stock within the State must be supplied with an agent's duplicate license at the cost of $1 which shall bear the same number and date as that of the principal. Wilful misrepresentation of quality or variety of stock offered for sale shall constitute a punishable misdemeanor. Prof. J. G. Sanders, Entomologist and Chief Nursery Inspector, College of Agriculture, Madison, Wis.

WYOMING.— Licenses are issued on application for a period terminating on July 1 of the next succeeding inspection year (approximately two years). Applications should be accompanied by the license fee of $25, a bond in the sum of $500, and by a certified certificate of inspection from an authorized inspector in the State from which shipments are to be made. On receipt of these the Secretary of the State Board issues authorized shipping tags at cost. Transportation companies may not deliver unless such tag be attached to each shipment. A copy of the law may be secured from the Secretary of the State Board of Horticulture, Prof. Aven Nelson, Laramie, Wyo.

CANADA.— No nursery stock shall be imported that is infested with any of the following insect pests or diseases: San José scale, brown-tail moth, gypsy moth, woolly aphis, West Indian peach scale, potato canker, gooseberry mildew, internal and external parasitic diseases of potato, branch canker, blister rust of white pine, Mediterranean fruit fly, potato tuber moth. Nursery stock shall be imported only through the ports and during the periods mentioned: Vancouver, B. C., from October 1 to May 1; Niagara Falls, Ont., from October 1 to May 15; Winnipeg, Man., North Portal, Sask., and St. John, N. B., from March 15 to May 15, and from October 7 to December 7; Windsor, Ont., and St. Johns, Que., from March 15 to May 15, and from September 26 to December 7.

Importations by mail are prohibited. The port by which it is intended that the nursery stock shall enter shall be clearly stated on each package, and notice of shipment must be sent to the Dominion Entomologist, Ottawa. European nursery stock and certain other classes of vegetation may in the case of certain ports be allowed to proceed and shall be inspected at point of destination, but must not be unpacked except in the presence of the inspector. Copies of the regulations governing the importation of nursery stock into Canada may be obtained from Dr. C. Gordon Hewitt, Dominion Entomologist, Ottawa, Canada, to whom all inquiries should be addressed.

Horticultural Pamphlets Available for Distribution.

Horticultural Bulletin No. 2.— Blister Rust of Pines and European Currant Rust.

Department Bulletin No. 41.— Wart Disease of the Potato.

Circular No. 32.— Law Relating to Insecticides and Fungicides.

Circular No. 67.— Relating to Fumigation of Bud Sticks and Nursery Stock.

Circular No. 68.—Law Relating to Insects Pests and Fungous Diseases and Nursery Inspection.

Circular No. 64.— Dying Hickory Trees.

Chapter 367, Laws of 1914.—Act Relating to the Sale of Fruit-bearing Trees.

Chapter 418, Laws of 1914.— New York State Apple Grading Law.

Circular No. 97.— Diseases of the Honey Bee and Treatment.

Circular No. 102.— List of Certified Nurserymen in the State of New York.

Circular No. 103.— Inspection, Certification and Transportation of Nursery Stock, U. S., all States and Canada.

Department Bulletin No. 61.— Peach Yellows and Little Peach.

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

Circular 104

UNIVERSITY OF ILLINOIS LIBRARY
AUG 21 1915

List of Commission Merchants Bonded and Licensed

Pursuant to the Provisions of Article 12-A of the
Agricultural Law (Chapter 457,
Laws of 1913)

September 1, 1914

STATE OF NEW YORK

Department of Agriculture

Calvin J. Huson, *Commissioner*

Albany, *September* 1, 1914

The following is the list of the persons, firms or corporations who have been licensed to this date by this Department, as Commission Merchants for the year ending July 1, 1915, pursuant to the provisions of Chapter 457 of the Laws of 1913. They have all complied with the provisions of the law and have given a bond in the sum of $3,000 which has been duly approved. A number of applications for licenses are still pending and supplemental lists of persons licensed will be issued from time to time.

If shippers of farm produce will make shipment of their products to the persons named in this list, they are assured of having the protection of the law for the regulation of the business of Commission Merchants, provided they mark such shipments " To Be Sold On Commission."

Sales of farm produce to commission merchants at a fixed price or a price to be agreed upon, are not sales on commission, and the above named law does not authorize this department to collect the amount due in case of non-payment; nor does it provide a penalty for such non-payment. All inquiries with respect to this law will be promptly answered. Send in the names and addresses of shippers in your locality to whom this circular might prove useful.

Before making a shipment of produce, the shipper should ascertain if the Commission Merchant to whom he intends shipping same handles that kind of produce.

It will greatly assist the Commission Merchant in handling produce expeditiously and in finding a good market therefor if the shipper will advise him of the kind, quality and approximate time of arrival of goods shipped or to be shipped.

All complaints should be made promptly and should be addressed to the Department of Agriculture, Albany, N. Y., and should contain a full statement of facts upon which same are based.

LICENSED COMMISSION MERCHANTS.

File number.	Name.	Organization.	Address.	Kind of produce handled.
			Albany.	
671	James J. Davis	Individual	10 Lyon Block	Fruits and vegetables.
238	Ransom J. De Long	Individual	330 Broadway	Fruits, vegetables, poultry, flour and feed.
320	Leslie J. Doyle	Individual	104 Hudson ave	Fruit, vegetables, hay, butter, eggs, etc.
427	Fitch, Cornell & Co	Corporation	348 Broadway	Butter and eggs.
582	Fox River Butter Co	Corporation	339 Broadway	Butter, eggs and cheese.
278	Alex. McKown	Individual	11 and 12 Lyon block	Fruits and vegetables.
670	William J. McMahon	Individual	3 Market square	Fruits and vegetables.
96	J. H. & F. A. Mead, Inc	Corporation	721 Broadway	Butter, cheese and eggs.
666	The W. W. Reed Co	Corporation	39 Hudson ave	Butter, eggs, cheese, etc.
302	Rich & Evertsen	Copartnership	8 and 9 Lyon block	Farm produce and fruits.
237	John J. Ryan	Individual	2 and 4 Grand st	Fruits and vegetables.
235	William J. Skillicorn	Individual	102 Hudson ave	Poultry, butter, eggs and cheese.
234	James Stephens & Son	Copartnership	Hudson ave. and Philip st	Fruits, vegetables and farm produce.
784	Swift & Co	Corporation	699–703 Broadway	Meat, poultry, eggs, dairy products, nuts and honey.
239	B. S. Winne	Individual	Cedar Hill	Hay and straw.
236	Henry R. Wright	Individual	326 Broadway	Farm produce and provisions.
			Amsterdam.	
587	Edward B. Roselle	Individual	22–24 West Main st	Fruits and vegetables.
			Antwerp.	
601	F. X. Baumert & Co	Copartnership		Butter and cheese.
			Ballston Spa.	
394	The Ballston Refrigerating Storage Co	Corporation	Bath st	Apples, potatoes and all farm produce.

BATH.

570	Dean & Co	Corporation	1 Liberty st	Hay, grain and potatoes.

BINGHAMTON.

148	Empire Produce Co	Corporation	142 State st	All kinds of farm produce.
821	Bert T. Stanton	Individual	47 Warren st	Fruits and vegetables.

BROOKLYN, N. Y.

575	M. & E. Appel Co., Inc	Corporation	171 Fort Green place	Eggs, poultry, beef, lamb and butter.
246	Armann & Colling	Copartnership	1014 Wallabout market	Fruits and produce.
94	Ashman & Burkhardt	Copartnership	117 Wallabout market	All kinds of farm produce.
594	Henry Z. Baum	Individual	Brooklyn R. R. terminals (10 Enos pl., Jersey City, N. J.)	Hay and straw.
93	William H. Beebe	Individual	221 Flushing ave., Wallabout market.	General produce.
193	Berrian Bros	Copartnership	30 Wallabout market	Fruit and vegetables.
247	Berrian & Joerger	Copartnership	122 West ave., Wallabout market	Fruit, eggs and produce.
459	Boehm & Co	Copartnership	185, 187 Fort Green place	Poultry and meats.
92	Daniel P. Boehm	Individual	204 Wallabout market	Poultry and eggs.
496	Emma Bohnson	Individual	84 Kent ave	Hay and straw.
480	August Henry Borchers	Individual	1032, 1033 Wallabout market	Fruits and produce.
194	Ignatz Braun	Individual	137 West ave., Wallabout market	Fruits and vegetables.
349	John Braun & Sons	Copartnership	148 West ave., Wallabout market	Fruits, vegetables and eggs.
545	Brooklyn Hay & Grain Co	Coporation	86–88 Kent ave	Hay, straw and grain.
125	Jacob Brooks	Individual	119 West ave., Wallabout market	Fruits and vegetables.
479	Bruna & Scheele	Copartnership	23, 24 Wallabout market	Fruits, vegetables and eggs.
10	Conron Bros. Co	Corporation	189, 191 Fort Green place	Meats.
499	Dworetzky & Shlefstein	Copartnership	97, 99 Varet st	Eggs and butter.
127	Fehring Bros	Copartnership	146 West ave., Wallabout market	Fruits and produce.
126	Ernest August Fitter	Individual	21 and 138 Wallabout market	Butter, eggs and cheese.
411	C. Fitter & Sons	Copartnership	11 Wallabout market	Butter and eggs.
532	John H. Gerdts & Sons	Copartnership	27 Washington ave., Wallabout mkt.	Fruits, vegetables and eggs.
129	R. Gleichmann & Co	Copartnership	113, 115 West ave., Wallabout market	Fruit, produce, poultry and eggs.
132	L. W. Goetschius & Co	Copartnership	1015 and 1129 Wallabout market	Fruits, vegetables and eggs.
725	Aron M. Goodman	Individual	89 Siegel st	Poultry, eggs and butter.
789	John W. Graubau	Individual	86–88 Kent ave	Hay and straw.
230	George W. Graf	Individual	201 Wallabout market	Calves, eggs, pigs and beef.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			BROOKLYN — *Concluded.*	
659	Halpern & Kaufman	Copartnership	1021 Washington ave	Butter, eggs and lard.
574	Casper Herold's Sons	Copartnership	26, 142–143 Wallabout market	Fruits and vegetables.
447	Henry S. Hotaling	Individual	All R. R. terminals (601 West 33d st., N. Y. C.)	Hay and straw.
788	Robert Jill	Individual	1108 Freeman ave., Wallabout market	Fruits and produce.
34	George Kastner & Co.	Copartnership	31 Wallabout market	Butter, cheese, eggs and lard.
621	Keller & Freeman	Copartnership	205 Market ave., Wallabout market	Poultry, calves and eggs.
213	D. Lippmann & Sons	Copartnership	1030, 1031 Wallabout market	Fruit and vegetables.
437	McAllen & Nuttall	Copartnership	All R. R. Terminals (601 West 33rd st. N. Y. C.)	Hay, straw, grain, etc.
401	Alexander McDicken Co.,	Corporation	18 Washington ave	Fruits and vegetables.
216	Paul Maniscalco	Individual	Wallabout market	All produce.
610	David Mayer	Individual	152 Fort Green place	Meats and poultry.
220	Louis Meklenburg	Individual	1016 Wallabout market	Fruits and vegetables.
658	William Menzer	Individual	124 Boerum st	Butter and eggs.
786	Theodore H. Meyer	Individual	132 West ave., Wallabout market	Fruits and produce.
281	Meyer, Re & Co.	Copartnership	101, 103 Wallabout market	Fruits and vegetables.
513	Miller & Bertholf	Copartnership	North 10th st. and Kent ave	Hay, straw, grain.
338	Frank Montesani	Individual	1022 Washington ave	Fruit, produce and poultry.
89	Hyman Morris	Individual	1023 Wallabout market	Fruit, produce and eggs.
294	F. Petchesky & Sons	Copartnership	240 Wallabout market	Fruits and produce.
766	William Protzmann & Co., Inc.	Corporation	East & Flushing aves. Wallabout mkt.	Meats, poultry and food products.
626	Louis Richter	Individual	5 Wallabout market	Fruits and vegetables.
579	Joseph Y. Roberts	Individual	All R. R. Termknals (601 West 33rd st., N. Y. C.)	Hay and straw.
51	James Rollo	Individual	1019 Washington ave., Wallabout market	Fruits and produce.

158	Joseph Sabel	Individual	234 Market ave., Wallabout market	Fruits and vegetables.
514	Chas. Schaefer & Son	Copartnership	304 Meserole st	Hay, straw and grain.
305	Schlick Bros	Copartnership	104, 106 West ave., Wallabout market	Fruits, poultry, eggs and farm produce.
83	Henry J. Schroeder	Individual	114 West ave., Wallabout market	Fruits, vegetables, nuts, honey, dairy products and eggs.
798	L. Seiden's Son	Individual	312 Stone ave	Butter, eggs, cheese and poultry.
311	L. J. Shukal & Co	Copartnership	15 Wallabout market	Fruits, butter, eggs and farm produce.
633	Simensky Brothers	Copartnership	131, 133 West ave., Wallabout market	Fruits and vegetables.
682	Herman Springer	Individual	14 Wallabout market	Fruit and vegetables.
784	Swift & Company, Inc	Corporation	74-76 Atlantic ave	Meats, poultry, eggs, dairy products, nuts and honey.
332	Thomas H. Townsend	Individual	126, 128 West ave., Wallabout market	Fruits, vegetables and eggs.
661	Frederick H. Vahlsing	Individual	1029 Washington ave., Wallabout market	Vegetables.
457	George E. Van Vorst., Inc	Corporation	1138 Flushing ave	Hay, grain and straw.
226	Sanford A. Vroman	Individual	86, 88 Kent ave	Hay and straw.
636	S. & W. Waldbaum	Copartnership	54, 56 Summer ave. and 911 DeKalb ave	Butter, eggs.
326	Ignatz Weissberger	Individual	1025 Washington ave., Wallabout market	Fruits and general produce.

BUFFALO

707	Alder-Stofer Grain Co	Corporation	619, 621 Chamber of Commerce	Corn, oats, wheat, rye and barley.
746	Morris Altman	Individual	161 Michigan st	Fruit, produce, poultry, eggs and butter.
259	Bert H. Bean	Individual	74, 76 West Market st	Fruit and produce.
314	Daniel Boosing	Individual	156 Michigan st	Butter, eggs, beans, cheese, poultry and maple syrup.
377	F. Brennisen & Son	Individual	156, 158 Michigan st	Fruit, vegetables, butter, eggs and poultry.
590	Buffalo Fruit & Produce Co., Inc	Corporation	180 Perry st	Fruit and produce.
710	Burns Grain Co	Corporation	715 Chamber of Commerce	Corn, oats, wheat, rye and barley.
128	William W. Burrell	Individual	178 Perry st	Fruit and farm produce.
144	Melvin Carpenter	Individual	44 West Market st	Farm fruits and produce.
711	Churchill Grain & Seed Co	Corporation	504 Peoples Bank Building	Grain and seeds.
699	Charles E. Collard	Individual	333 Chamber of Commerce	Grain, wheat, corn and oats.
686	Frank P. Coward & Son	Copartnership	82, 86 West Market st	Fruit, butter, eggs and farm produce.
778	DeCarlo & Polito	Copartnership	165 Scott st	Fruits, produce and dairy supplies.
142	John Dohn	Individual	46 West Market st	Farm products and fruit.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			BUFFALO — *Continued.*	
718	Doorty-Ellsworth Company, Inc.	Corporation	619 Chamber of Commerce	Grain and by-products.
517	C. S. Dudley	Individual	174 Perry st. and 129, 131 Michigan st	Fruits and vegetables
697	Eastern Grain Co.	Corporation	602, 608 Marine Nat'l Bank Bldg	Grain and feed.
739	Benjamin F. Eberhardt	Individual	37 East Market st	General produce.
745	Eckert Brothers	Copartnership	41, 43 East Market st	Vegetables, fruits and farm produce.
143	Louis Engel	Individual	48 West Market st	Fruits and vegetables.
145	Fairmont Creamery Co	Corporation	170 Michigan st	Fruits, produce and dairy products.
582	Fox River Butter Co	Corporation	58 West Market st	Butter, cheese and eggs.
793	J. H. Gail Co., Inc	Corporation	153 Michigan st	Fruits, vegetables, butter and eggs.
131	Gleason & Lansing	Copartnership	150 Michigan st	Butter, cheese, eggs, honey, maple sugar and syrup, beans and poultry.
130	Frank L. Graham	Individual	56 West Market st	Fruit and produce.
700	Henry S. Guthrie	Individual	723 Chamber of Commerce	Grain, hay and seeds.
371	Harlow Brothers	Copartnership	141, 143 Michigan st	Produce of all kinds and poultry.
705	Arthur W. Harold	Individual	717 Chamber of Commerce	Grain.
706	W. G. Heathfield & Co., Inc	Corporation	831 Chamber of Commerce	Grain.
265	Albert Hendel	Individual	155 Michigan st	Fruits, produce, eggs and poultry.
266	Charles H. Hickman	Individual	100 West Market st	Butter, eggs, poultry and produce.
643	Horn & Zimmer	Copartnership	58, 60 West Market st	Fruits, vegetables, eggs, cheese, butter and poultry.
264	Frank X. Huber	Individual	40 West Market st	Farm produce.
701	Dudley M. Irwin	Individual	1117 Chamber of Commerce	All kinds of grain.
688	Kendrick & Johnson	Copartnership	64, 66 West Market st	Fruits and produce.
790	Chas. Kennedy & Co., Inc	Corporation	832, 837 Chamber of Commerce	No farm produce. Wheat, corn, oats, rye and barley from elevator and warehouse men.
775	Amry E. Layman	Individual	100 West Market st	Farm produce.

781	Leon Bros., Inc	Corporation	172 Michigan st	All products of farm, orchard and vineyard.
719	McConnell Grain Corporation	Corporation	329 Chamber of Commerce	Grain and grain products.
285	M. and S. Produce Co	Copartnership	171 Scott st	Fruits and vegetables.
288	National Fruit and Produce Co	Copartnership	173 Perry st	All farm products except butter, eggs, cheese poultry and game.
488	North American Fruit Exchange	Corporation	61 East Market st	Fruit and vegetables.
807	George E. Pierce	Individual	710 Chamber of Commerce	All classes of grain.
256	Potter & Williams Co., Inc	Corporation	144, 146 Michigan st	Fruits and produce.
783	Pratt & Co	Corporation	910 Chamber of Commerce	Grain.
704	Stephen M. Ratcliffe	Individual	835 Chamber of Commerce	Grain, hay and straw.
299	Rea & Witzig	Copartnership	104 West Market st	Fruit and produce.
668	Jacob Reiner	Individual	13 Chippewa Market	Hay and vegetables.
296	B. D. Rogers' Sons	Copartnership	102 West Market st	Fruit and vegetables
297	Rothenberg Bros	Copartnership	176, 178 Perry st	Fruit, eggs, butter and produce.
261	Satuloff Bros	Copartnership	145 Michigan st	Fruit, vegetables and poultry.
306	Emil Adam Sauer	Individual	624 Washington st	General prodoce.
310	F. J. Schafer, Jr	Individual	96 West Market st	Butter, eggs, poultry and fruits.
309	John E. Schintzius	Individual	38 West Market st	Fruits and vegetables.
470	Geo. R. Schreck	Individual	61 East Market st	Fruits and vegetables.
702	Seymour Grain Co	Corporation	623, 625 Chamber of Commerce	Wheat, corn, oats, barley, rye and feeds.
776	Sheldon Produce Co., Inc	Corporation	56 West Market st	Fruit, produce and poultry.
308	Snyder & Co	Copartnership	62 West Market st. and 125 Michigan st	All kinds of green and dry vegetables, butter, eggs, live and dressed poultry.
307	Fred F. Stone	Individual	62 West Market st	Eggs, butter, poultry and cheese.
784	Swift & Co., Inc	Corporation	85, 91 East Market st	Meat, poultry, eggs, dairy products, nuts and honey.
722	Townsend Ward Co	Corporation	633 Chamber of Commerce	Wheat, corn, oats, rye and barley.
334	F. J. Trautman's Sons	Copartnership	52 West Market st	Farm produce and cheese.
436	W. M. Truesdale	Individual	135 Michigan st	All kinds of produce.
333	Walter A. Tuttle	Corporation	169 Scott st	Poultry and game.
331	George A. Underwood	Individual	42 West Market st	Fruit, poultry and general farm produce.
404	Fred Unger	Individual	175, 177 Perry st	All kinds of farm produce.
794	Urmston Harting Grain Co	Copartnership	815, 816 Chamber of Commerce	Wheat, corn, oats, rye and barley.
329	Vishion & Co	Individual	68 West Market st	Butter, eggs, poultry, fruits, vegetables and general produce.
698	Henry D. Waters	Individual	635 Chamber of Commerce	Grain.

LICENSED COMMISSION MERCHANTS — *Concluded.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
BUFFALO — *Concluded.*				
767	Frank E. Wattles & Bro	Copartnership	148 Michigan st	Butter, eggs, cheese, poultry, maple sugar and syrup, beans and oleo compound.
551	G. M. Wattles & Son	Copartnership	152 Michigan st	Butter, eggs, cheese, honey, beans and maple sugar.
321	Jay B. Wattles	Individual	171 Perry st	Butter, eggs, cheese and poultry.
157	Wax & Sugarman	Copartnership	159 Michigan st	Eggs, butter, fruits, vegetables and poultry.
324	Francis M. Welch & Co	Individual	139 Michigan st	Fruits, vegetables and poultry.
322	George R. Whitney	Individual	42 West Market st	Butter, cheese, eggs and poultry.
795	Whitney & Gibson	Corporation	1009 Chamber of Commerce	Grain. and flax.
323	William C. Will	Individual	163 Scott st	Fruit, vegetables and poultry.
CARTHAGE				
759	Phillips & Dealing	Copartnership	3 Water st	Fruits, vegetables, maple sugar and syrup, butter and eggs.
CEDAR HILL, ALBANY COUNTY.				
239	B. S. Winne	Individual		Hay and straw.
COHOES.				
504	Charles Rogers & Son	Copartnership	65 Canvass st	Butter, cheese, eggs, beans and honey.
CORNING.				
148	Empire Produce Co	Corporation	134 West Market st	Farm produce.
784	Swift & Co., Inc.	Corporation	22, 24 East Tioga st	Meat, poultry, eggs, dairy products, nuts and honey.
CORTLAND.				
771	Frank E. Davis	Individual	11 Port Watson st	Fruits and vegetables.

			ELMIRA.	
148	Empire Produce Co	Corporation	316, 318 Carroll st	Farm produce.
241	F. A. Keeton	Individual	123 Baldwin st	Fruits and vegetables.
468	Meade & Post Co., Inc	Corporation	160 Lake st	Fruits, vegetables and farm products.
105	W. H. Ferguson & Son	Copartnership	231, 235 East Water st	All farm produce.
784	Swift & Co., Inc	Corporation	Railroad ave	Meat, poultry, eggs, dairy products, nuts and honey.
			ESPERANCE, SCHOHARIE COUNTY.	
330	Sidney B. Vunck	Individual		Farm produce.
			EVANS MILLS.	
601	F. X. Baumert & Co	Copartnership		Butter and cheese.
			FLUSHING.	
784	Swift & Co., Inc	Corporation	32 Broadway	Meat, poultry, eggs, dairy products, nuts and honey.
			GENEVA.	
784	Swift & Co., Inc	Corporation	40 Middle st	Meat, poultry, eggs, dairy products, nuts and honey.
			GLENS FALLS.	
784	Swift & Co., Inc	Corporation	Prospect and Maple sts	Meat, poultry, eggs, dairy products, nuts and honey.
			GLOVERSVILLE.	
782	Sarraino Brothers	Copartnership	93 West Fulton st	Fruits and vegetables.
			HAVERSTRAW.	
784	Swift & Co., Inc	Corporation	New Main st	Meat, poultry, eggs, dairy products, nuts and honey.
			HORNELL.	
148	Empire Produce Co	Corporation	57 Canisteo st	Farm produce.
784	Swift & Co., Inc	Corporation	Canisteo st	Meat, poultry, eggs, dairy products, nuts and honey.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			HUDSON.	
146	Chas. C. Finger	Individual	744 Warren st	Fruits and vegetables.
328	C. A. Van Deusen Co	Corporation	13–23 North 7th st	Butter, eggs, cheese, maple sugar, maple syrup, etc.
			ITHACA.	
268	Jester W. Hook	Individual	113, 115 South Tioga st	Fruits, vegetables, butter and eggs.
784	Swift & Co., Inc	Corporation	Seneca and W. Port st	Meat, poultry, eggs, dairy products, nuts and honey.
			JAMESTOWN.	
569	Treat & Ogilvie	Copartnership	208–210 Pine st	Fruits, farm produce, etc.
784	Swift & Co., Inc	Corporation	33 Institute st	Meat, poultry, eggs, dairy products, nuts and honey.
			KINGSTON.	
318	Everett & Treadwell Co	Corporation	536 Broadway and 132 No. Front st.	Butter, eggs, maple syrup, maple sugar, honey, etc.
			LA PORTE.	
431	Lynch & Branch	Copartnership		Fruits.
			LINLITHGO, COLUMBIA CO.	
538	Washburn & Co	Individual		Hay and straw.
			MARLBOROUGH.	
757	Olivit Bros., Inc	Corporation		General produce.
			MIDDLETOWN.	
784	Swift & Co., Inc	Corporation	20 Henry St	Meat, poultry, eggs, dairy products, nuts and honey.

			NEW ROCHELLE.	
784	Swift & Co., Inc	Corporation	131 Hugenot st	Meat, poultry, eggs, dairy products, nuts and honey.
			NEWARK, WAYNE COUNTY.	
684	C. Rupert & Sons	Corporation		Hay, straw, produce, fruits and grain.
			NEWBURGH.	
784	Swift & Co., Inc	Corporation	Near L. E. & W. R. R	Meat, poultry, eggs, dairy products, nuts and honey.
			NEW YORK.	
108	Bernard Abel Co., Inc	Corporation	305 Washington st	Fruit and produce.
462	Carl Ahlers	Individual	5 Worth st	Butter, cheese and eggs.
257	Albert & Gerber	Copartnership	315 Greenwich st	Butter and eggs.
750	Robert Alexander	Individual	311 Washington st	Poultry and eggs.
373	Wm. L. Allen & Co	Copartnership	81 North Moore st	Dried Fruits.
168	E. S. Alpaugh & Co	Corporation	18 Bloomfield st	Meats, poultry, butter and eggs.
573	L. Amendola & Co	Copartnership	294 Washington st	Fruits and vegetables.
559	American Cranberry Exchange	Corporation	105 Hudson st., 188 Chambers st	Cranberries.
1	W. D. Appleget & Co	Corporation	50-58 Thompson ave	Poultry, calves, pork, lamb and eggs.
580	Armstrong & Swift	Copartnership	321 Greenwich st	Butter, cheese and eggs.
539	Harry Atlas	Individual	314½ Greenwich st	Eggs and butter.
135	J. H. Bahrenburg Bro. & Co	Copartnership	103 Murray st	Fruits and produce.
258	William Baldwin & Sons	Copartnership	132d st. and Lincoln ave	Fruits, vegetables and country produce.
104	Balfour Brothers	Copartnership	850, 852 Washington st	Butter and eggs.
394	The Ballston Refrigerating Storage Co	Corporation	90 West Broadway	Apples, potatoes and all farm produce.
103	S. Morgan Barber	Individual	403 E. 103d st	Butter, eggs, poultry, cheese, produce and canned goods.
100	F. C. Barger & Co	Copartnership	158 Franklin st	Butter and eggs.
102	J. A. Bassett	Individual	132d st. and Willis ave	Fruits, vegetables, eggs, poultry and pork.
594	Henry Z. Baum	Individual	New York R. R. Terminals (10 Enos place, Jersey City)	Hay, straw and grain.
601	F. X. Baumert & Co	Copartnership	177 Franklin st	Butter and cheese.
664	Edward Beatty	Individual	Produce Exchange Bldg., 6 Broadway	Grain.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
426	Henry Behrman & Sons	Copartnership	257, 259 Washington st	Butter, cheese, eggs and poultry.
690	A. Bennett & Co., Inc	Corporation	103 Park pl	Fruits and vegetables.
351	S. Benowitz & Co	Copartnership	356 Greenwich St	Butter, eggs, poultry and farm produce.
785	E. E. Berean & Co	Copartnership	192 Reade st	Fruits, vegetables, eggs, poultry and nuts.
171	Albert Berg	Individual	158th st. and Morris ave	Country produce.
350	Berkowitz & Schwartz	Copartnership	121 Warren st.; 173, 175 Attorney st	Fruit and general produce.
190	J. A. Bernholz & Sons	Individual	30 Harrison st	Eggs, poultry, butter and cheese.
692	Irvan L. Berrian & Co	Copartnership	110 Warren st	Fruits and vegetables.
642	P. D. Berrian & Co	Individual	188 Reade st	Fruits and farm produce.
383	S. Betman & Son	Copartnership	188 Duane st	Butter, eggs and poultry.
98	James A. Betts	Individual	292 Washington st	Fruits and vegetables.
374	Beyer Bros. Commission Co	Corporation	19 Harrison st	Butter, eggs, cheese and poultry.
811	W. S. Bishop & Co., Inc	Corporation	333 Washington st	Fruits, vegetables, calves, eggs, poultry and farm produce
370	John M. Blackburn	Individual	276 Washington st	Fruits and vegetables.
466	The S. Blick Co	Corporation	346 Greenwich st	Butter and eggs.
110	Max Blum	Individual	142 Reade st	Cream, butter, cheese and eggs.
382	Bodine & Hinrichs	Corporation	26–30 Lawton ave., West Washington Market	All farm products.
3	Daniel P. Boehm Co	Corporation	345, 347 Washington st	Poultry and eggs.
814	Bogert & Greenbank	Copartnership	Produce Exchange Bldg	Grain.
496	Emma Bohnson	Individual	33d st. and Eleventh ave	Hay and straw
415	Bourne & Farrand	Copartnership	159 Chambers st	Butter, cheese and eggs.
109	Henry Brantigan	Individual	142 Park pl	Fruits, vegetables, nuts, honey, poultry, eggs, butter and cheese.
248	Henry Brinker & Co	Copartnership	199 West st	Fruits and vegetables.
162	B. F. Britten & Co	Individual	27 Harrison st	Dairy products and eggs.
348	C. M. Britten Co	Copartnership	15 Harrison st	Eggs and butter.

4	Rudolph Brossmann	Individual	24 Harrison st	Butter.
29	R. L. Brower & Co	Individual	92 Barclay st	Fruits, vegetables, eggs, nuts, meats, clams and oysters.
755	Frederick F. Brown	Individual	307 Greenwich st	Cheese, butter and eggs.
5	George G. Brown	Individual	57 Lawton ave.; 34, 42 Bloomfield st.	Poultry, eggs, dressed calves and hogs.
630	The S. S. Brown Co	Corporation	105 First st. and 207 East 123d st	Butter, cheese, eggs and cream.
465	W. P. Brown & Sons	Copartnership	139 Reade st	Butter and eggs.
107	H. Burlew Co	Individual	119 Warren st	Vegetables, fruits, eggs and poultry.
756	Charles H. Burmeister & Co	Individual	134 Reade st	Butter and eggs.
552	Junius C. Bush	Individual	39 Courtlandt st	Hay and straw.
440	James Butler, Inc	Corporation	390 Washington st	Butter, cheese, eggs and vegetables.
112	H. T. Cadenas Co., Inc	Corporation	27 William st	Fruits and vegetables.
605	M. Calderone	Individual	2012 First ave	Fruits, berries and vegetables.
111	Wm. A. Camp & Co	Individual	361 Washington st	Potatoes, onions, nuts, dried fruits, etc.
486	Geo. B. Campbell	Individual	262 Washington st	Fruits and vegetables.
439	Teresina Carobine	Individual	1983, 1985 First ave	Fruits and vegetables.
178	T. Carobine & Co	Copartnership	120 Warren st	Fruits and vegetables.
150	Isaac W. Carr & Co	Copartnership	204 Franklin st	Fruits and vegetables.
6	J. Pratt Carroll, Inc	Corporation	267, 269 Washington st	Fruits and vegetables.
550	Carscallen & Cassidy	Corporation	N. Y. Produce Exchange	Hay, straw and grain.
529	L. Casazza & Co	Copartnership	254 Washington st	Fruits and produce.
639	A. Cavagnaro	Copartnership	224, 226 Washington st	Fruits — mostly oranges and apples.
429	The Clark & Brown Hay Co	Corporation	970 Cauldwell ave	Hay and straw.
638	R. E. Cochran Co., Inc	Corporation	132 Park pl	Fruits and produce.
8	Robert T. Cochran & Co	Copartnership	290 Washington st	Fruits, vegetables, poultry, calves, game and eggs.
765	S. Cohen & Co	Copartnership	12 Ludlow st	Fruits and produce.
347	Wm. H. Cohen & Co	Individual	229 Washington st	Poultry, meats, eggs, nuts and fruits.
114	Charles W. Colburn	Individual	59 Little West 12th st	Eggs and poultry.
413	Chas. Collins Co	Copartnership	197 West st	Live poultry.
10	Conron Brothers Co., Inc	Corporation	40 Tenth ave.,	Meats.
345	John Corell & Co	Copartnership	334 Washington st	Poultry, meats and eggs.
355	Frank Couch & Co	Copartnership	346 Washington st	Vegetables, fruit and farm produce.
11	The Arthur Courtin Co	Corporation	85 Front st	Citrus fruits.
113	Covert Bros	Copartnership	299 Washington st	Farm produce.
359	Covert & Cottrell	Copartnership	2001 First ave	Fruits and produce.

Licensed Commission Merchants — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			New York — *Continued.*	
172	Coyne & O'Leary	Copartnership	108 Murray st	Fruit, vegetables, butter and eggs.
115	John C. Crate	Individual	306 Washington st	Fruits and produce.
525	Jas. W. Crawford	Individual	15 Harrison st	Eggs, butter, poultry and game.
481	Cregan & Meany	Copartnership	197 Reade st	Vegetables and fruits.
263	D. Crossley & Sons, Inc	Corporation	204 Franklin st	Vegetables and fruits.
727	Cuneo Bros	Individual	230 Washington st	Fruits and nuts.
346	Cunningham Bros	Copartnership	104 Barclay st	Meats.
810	Curran Robertson Co	Copartnership	178 Chambers st	Fruits and vegetables.
262	R. C. Curtis	Copartnership	189 Reade st	Fruits and vegetables.
197	George E. Cutler	Individual	22 Harrison st	Eggs and butter.
231	W. J. & S. H. Davenport	Copartnership	130 Park pl	Fruits and general produce.
665	Andrew Davey	Individual	350–354 Greenwich st	Butter and eggs.
458	W. M. Davidson & Co	Individual	106 Murray st	Fruit and vegetables.
12	W. O. & H. W. Davis	Corporation	100 Barclay st	Fruits and vegetables.
570	Dean & Co	Corporation	601 West 26th st	Hay, grain and potatoes.
13	Dennis & Herring	Corporation	49–55 Thompson ave., West Washington market	Hogs, dressed calves and pigs, live and dressed poultry. All country produce.
715	Dennis, Kimball & Pope, Inc	Corporation	202 Franklin st	Fruits and produce.
14	S. De Noyelles & Co	Copartnership	34, 36 Hewitt ave., West Washington market	Poultry, eggs, butter, calves and lambs.
523	Descalzi Bros. Co	Copartnership	238 Washington st	Fruits and produce.
758	Deutsch & Tauber Bros	Copartnership	326 Greenwich st	Butter, eggs and poultry.
623	De Winter & Stewart, Inc	Corporation	321 Washington st	Poultry.
354	W. C. Deyo & Bro	Copartnership	859, 861 Washington st	Fruits, produce, butter, eggs and poultry.
434	E. A. Dillenbeck	Individual	601 West 33d st	Hay, straw, grain and farm produce.
249	C. I. & M. Dingfelder	Copartnership	253 Washington st	Farm produce.

117	R. Dixon & Co., Inc	Corporation	202, 204 Franklin st	Fruits, vegetables, nuts and honey.
134	R. W. Dixon & Son	Copartnership	266 Washington st	Fruits, vegetables, eggs, poultry, veal and hogs.
423	William Doolittle & Son	Copartnership	22 Harrison st	Butter, cheese and eggs.
154	Joseph A. Doran	Individual	132d st. and Lincoln ave	Fruits and vegetables.
15	John Doscher & Co	Copartnership	133 Reade st	Butter, cheese and eggs.
425	W. S. Douglas & Co	Individual	191 Duane st	Butter, cheese and eggs.
796	David Dreyfuss	Individual	317 Washington st	Fruits and vegetables.
169	Droste & Snyder, Inc	Corporation	177, 179 Duane st	Butter and eggs.
528	Dulany & Tull	Copartnership	41–45 Hewitt ave., West Washington market	Poultry and game.
208	W. J. Duncan & Co	Individual	251 Washington st	Fruits and general produce.
173	N. Durham & Sons	Copartnership	313 Washington st	Poultry, veal, squabs and eggs.
449	Edwin B. Dusenberry	Individual	601 West 33d st	Hay and straw.
497	Dusenbery & Co	Copartnership	90 West st	Hay, straw and farm products.
118	Lewis Ebert & Sons, Inc	Corporation	151 Reade st	Butter, cheese and eggs.
412	Egbert & Case	Corporation	11 Jay st	Butter and eggs.
16	John H. Ehlers	Individual	866 Washington st	Fruit and vegetables.
518	Wm. Ellis	Individual	51 Little West 12th st	Fruits, eggs and produce.
119	William W. Elzea	Individual	327, 329 Washington st	Butter, eggs, cheese, poultry, nuts and hides.
797	Empire Produce & Export Co	Corporation	204 Franklin st	Produce in general.
17	Enyard & Godley, Inc	Corporation	171 Duane st	Butter and eggs.
120	J. N. Everitt Co	Corporation	326 Washington st	Dressed and live poultry, dressed veal, fruit and vegetables.
18	Oliver A. Farley	Individual	9, 15 Hewitt ave	Poultry, game, calves and pork.
19	W. J. Farrell Co	Corporation	325 Washington st	Dressed poultry and eggs.
760	John H. Fay, Inc	Corporation	324 Washington st	Fruit and general produce.
717	Ficken & Zinn	Copartnership	331 Greenwich st	Butter, eggs and cheese.
596	Albert C. Field, Inc	Corporation	C-21 Produce Exchange and 9 Stone st	Wheat, corn, oats and barley.
137	Geo. F. Fish	Individual	183 Reade st., 410 West 14th st	Celery and lettuce.
387	S. Fish & Co	Copartnership	260 Washington st	Fruit and vegetables.
482	Alex. F. Fisher	Individual	601 West 33rd st	Hay and straw.
817	Fisher & Overocker	Copartnership	601 West 33rd st	Hay and straw.
427	Fitch, Cornell & Co	Corporation	16, 18 Jay st	Butter and eggs.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
121	Fleck & Hillman, Inc	Corporation	49 Loew ave., West Washington market	Live poultry.
232	Emil Fleischl & Son	Copartnership	514 Westchester ave	Eggs, butter, cheese and lard.
416	Florida Brokerage Co	Copartnership	97–101 Warren st	Pineapples, tomatoes, cucumbers, celery and lettuce.
653	L. W. Forbell & Co	Copartnership	6 Broadway, Produce Exchange Bldg.	Grain.
753	Fortgang Brothers	Copartnership	356 Greenwich st	Butter and eggs.
685	Fox River Butter Co	Corporation	78 Hudson st	Butter, eggs and cheese.
463	Jno. H. Francke & Co	Copartnership	239 Washington st	Fruit and vegetables.
95	Sol. Frankel, Inc	Corporation	50-56 Loew ave., W. Washington mkt.	Live poultry.
540	Franklin Feed Stores	Corporation	83 Moore st	Hay, straw and grain.
20	Oscar Frommel & Bro	Corporation	Manhattan market	Fruit and vegetables.
464	S. H. & E. H. Frost	Corporation	319 Washington st	Fruits and vegetables.
21	Frost & McNab	Copartnership	42 Harrison st	Fruits and vegetables.
430	N. A. Fuller & Co	Individual	110 West 34th st	Hay and straw.
85	Furman & Page, Inc	Corporation	112 Warren st	Fruit and general produce.
139	Bernard Gallup	Individual	601 West 33d st	Hay, straw, fruit and general produce.
22	William Gamble & Co	Corporation	292 Washington st	Fruits and vegetables.
769	Frank Gargiulo	Individual	314 Washington st	Fruit and vegetables.
454	Charles C. Garrett	Individual	12 Harrison st	Butter, eggs and cheese.
572	The Harry G. Gere Co	Corporation	C-5 Produce Exchange	Hay, straw, grain and vegetables.
627	John Gilliam Co	Corporation	105 Hudson st	Canned and dried fruits, vegetables, nuts, beans, peas and honey.
91	David P. Godfrey	Individual	118 Warren st	Fruits and vegetables.
628	Salvatore Greco	Individual	2052 First ave	Fruits and farm produce.
188	Greenspan & Brenner	Copartnership	192 Duane st	Butter and eggs.
396	Thomas D. Griffin & Co	Individual	292 Washington st	Fruits and vegetables.
77	Henry H. Grimm & Co	Individual	93 Park pl	Fruits and produce.

476	Gude Brothers, Kieffer Co	Corporation	21 Jay st	Butter, eggs and cheese.
23	Frank Gulick	Individual	Corner Hewitt and Lawton aves., West Washington market	Poultry.
250	Hait & McNicholas	Copartnership	843 Washington st	Fruits and vegetables.
748	Herbert I. Hall	Individual	189 Chambers st	Fruits, eggs and farm produce.
251	The J. Hamburger Co	Copartnership	264 Washington st	Fruits and vegetables.
210	G. P. Hammond & Co	Individual	40 Little West 12th st	Fruit, vegetables, eggs, mushrooms and hot house products.
25	Hance Brothers Co	Corporation	32 Bloomfield st	Poultry, calves, pork, lambs, nuts, furs and skins.
252	Warren D. Hanford	Individual	105 Hudson st	Butter and eggs.
501	L. V. Hankamp	Individual	182 Reade st	General farm produce.
26	Horace B. Hanson	Individual	180 Reade st	Fruits and vegetables.
571	Harlem Valley Fruit & Produce Association, Inc	Corporation	132d st. and Lincoln ave	Fruits, vegetables and general produce.
694	William H. Hart	Individual	534 Westchester ave	Apples and oranges.
72	G. Z. Hawk & Son Co., Inc	Corporation	34–40 Lowe ave., West Washington market	Live poultry.
716	Harry Heilman	Individual	518 Westchester ave	Beef, calves and poultry.
650	Louis Hellman	Individual	132d st. and Lincoln ave., Bronx Produce House	Fruits and vegetables.
211	C. M. Herring & Co., Inc	Corporation	23, 25, 27 Thompson ave	Calves, poultry and eggs.
212	Heuser & Vreeland	Copartnership	207 Duane st	Fruit, vegetables, eggs, calves and poultry.
652	Fay D. Hewitt	Individual	120 Liberty st	Hay and straw. Carloads only.
253	George F. Hinrichs & Co., Inc	Corporation	33 Hewitt ave	Vegetables, fruits, meats, poultry, eggs, nuts, dairy products and honey.
606	L. Hirshberg & Co	Copartnership	337 Washington st	Fruits and vegetables.
749	Jacob Hoehn	Individual	295 Washington st	Dressed poultry, eggs and veal.
723	W. S. Hofstatter & Son Produce Co	Corporation	358 Greenwich st	Butter, eggs, cheese and poultry.
420	Honig & Klein	Copartnership	22 Harrison st	Butter, eggs and cheese.
493	A. Honigsberg & Co	Copartnership	300 Greenwich st	Butter and eggs.
447	Henry S. Hotaling	Individual	601 West 33d st	Hay and straw.
417	Charles B. Hovey	Individual	33-37 Thompson ave., West Washington market	Live and dressed poultry, pigs, calves, fruit and eggs.
461	E. C. Howell Co	Individual	250 Washington st	Celery and general produce.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
734	Theo. P. Huffman & Co.	Individual	648 West 34th st	Hay, straw and grain.
450	Henry L. Hunter	Individual	132d st. and Lincoln ave	Fruit, vegetables and general produce.
368	Hunter, Walton & Co	Copartnership	164, 166 Chambers st	Butter, cheese and eggs.
561	John C. Huser & Brother	Copartnership	190 Duane st	Butter, eggs and cheese.
28	J. W. Hutchinson & Co	Individual	315 Washington st	Fruits and vegetables.
165	Imperato Brothers	Copartnership	2019 First ave	Fruits and vegetables.
491	Jacobs Brothers	Copartnership	39-43 Loew ave.; 65, 67 Hewitt ave.	Live poultry.
30	W. T. James & Co	Individual	118 Warren st	Farm produce.
254	Jelliffe, Wright & Co	Individual	284 Washington st	General produce.
410	H. B. Jenkins & Co	Copartnership	601 West 33d st	Hay and straw.
781	Jewell Brothers, Inc	Corporation	25-31 Loew ave	Meats, eggs, poultry and game.
255	Martin Johnson & Son	Individual	280 Washington st	Fruit, vegetables, eggs, meats and poultry.
229	Hugo Josephy & Son	Copartnership	178, 180 Chambers st., and West Washington market	Poultry, game and eggs.
32	George W. Judd	Individual	278 Washington st	Fruits, poultry and dressed calves.
33	Louis Kadans	Individual	306 Greenwich st	Butter, eggs, cream, cheese and poultry.
780	David C. Kassel	Individual	21 13th ave	Poultry and eggs.
611	Keusch & Schwartz Co., Inc	Corporation	C-1-2-3 Produce Exchange	Grain and feed.
35	J. H. Killough & Co	Copartnership	157, 158 West st	Fruits, vegetables and farm produce.
315	C. H. & C. W. Kimball	Copartnership	202 Franklin st	Fruits and vegetables.
357	Joseph B. Kirk	Individual	871, 873 Washington st	Vegetables and fruits
270	Jacob M. Klein	Individual	311 Washington st	Poultry and eggs.
591	Edgar Kleinhans	Individual	601 West 26th st	Fruits and vegetables.
177	Knapp Bros. & Co	Individual	106 Murray st	Fruits and vegetables.
660	Knight & McDougal	Copartnership	219 Produce Exchange	Wheat, corn, oats, barley and rye.
73	Koenig and Company	Copartnership	56–64 Loew ave., W. Washington market	Live poultry.

36	Kossar and Co., Inc	Corporation	37 Loew ave., W. Washington Market	Live poultry.
691	Krakaur Poultry Co., Inc	Corporation	23 13th ave	Live poultry, rabbits, guinea pigs, squabs and pigeons.
74	Joe. H. Krenrich Commission Co.	Corporation	8 Harrison st	Butter, eggs, cheese and canned goods.
533	Nathan Kronman & Co., Inc	Corporation	349–55 Washington st	Fruits, poultry and produce.
136	Kunz, Marsh & Pendleton, Inc	Corporation	170 Reade st	Fruits and vegetables.
644	Kurtin & Kurtin	Copartnership	305 Greenwich st	Butter and eggs.
754	Kurtin & Safren	Copartnership	162 Reade st	Butter and eggs.
353	Lambly & Alpaugh	Copartnership	18 Harrison st	Butter and eggs.
608	Patrick Lamia	Individual	99 Warren st	Fruits and vegetables.
37	Vincent R. Lamia	Individual	202 Franklin st	Fruits, vegetables and eggs.
679	L. H. Lang & Co	Corporation	524–526 Westchester ave	Calves, live poultry and eggs.
38	J. K. Lasher & Bro	Copartnership	11 Harrison st	Butter and eggs.
271	A. Lauro & Bro	Copartnership	836 Washington st	Fruits, vegetables, eggs and poultry.
156	P. Lawless' Sons	Corporation	53, 55 Little West 12th st	Fruits, vegetables, poultry and eggs.
361	Leigh and Everitt	Copartnership	297 Washington st	Poultry, eggs, calves, pork and general produce.
275	August J. Lemkau	Individual	312 Washington st	Fruits and produce.
39	George H. Lewis & Sons	Copartnership	43–49 Grace ave., W. Washington market	Country produce.
40	Linders & Co	Copartnership	288 Washington st	Fruits, vegetables, poultry, nuts, meats and eggs.
560	Gustave Lippmann & Co	Individual	161 West st	Fruits and vegetables.
375	J. & G. Lippmann	Corporation	338 Washington st	Eggs, butter, farm produce and fruits.
41	Jacob Lippmann	Individual	268 Washington st	Fruits and produce.
403	Wm. H. Liscomb & Co	Copartnership	124–126 Park place	Fruits and vegetables.
696	Live Poultry Auction Co., Inc	Corporation	425 West 14th st	Live poultry, eggs, butter and dressed poultry.
474	Geo. Loblein & Co	Individual	172 Reade st	Domestic fruits and vegetables.
806	Thos. F. Loblein & Son, Inc	Corporation	287 Washington st	Fruits and vegetables.
274	Clifford C. Lockwood	Individual	344 Washington st	Fruits and vegetables.
273	I. Loewenthal	Individual	187 Reade st	Fruits and farm products.
388	James Long, Inc	Corporation	118 Warren st	Country produce, fruits, vegetables, etc.
214	S. S. Long & Bro., Inc	Corporation	102–106 Warren st	Butter, eggs and cheese.
228	E. P. Loomis & Co	Copartnership	119–121 Barclay st	Domestic and foreign fruits and produce.
622	Salvatore Lorelli	Individual	72 Gansevoort st	Fruits and vegetables.

Licensed Commission Merchants — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			New York — *Continued.*	
764	Frederick F. Lowenfels & Son	Copartnership	348 Greenwich st	Butter, cheese and eggs.
155	W. B. Lunn's Sons	Copartnership	304 Greenwich st	Butter, cheese and eggs.
431	Lynch & Branch	Copartnership	108 Murray st	Fruits.
352	Edward Lyons & Sons	Copartnership	408 11th ave., Manhattan market	Farm produce, apples and vegetables.
437	McAllen & Nuttall	Copartnership	601 West 33d st	Hay, straw and grain.
402	Hugh McCarren, Jr	Individual	163 West st	General country produce.
44	Peter McClees	Individual	300 Washington st	Vegetables, fruits and hot house produce.
279	McCormick, Hubbs & Co	Corporation	279 Washington st	West Indian and Florida fruits and produce.
791	Daniel B. McElwee	Individual	158th st and Morris ave	Farm produce.
287	Gecrge S. Males	Individual	306 Greenwich st	Eggs and butter.
547	Philip Mandelker	Individual	39 Harrison st	Butter, eggs and poultry.
424	Mangan-Betz Co	Copartnership	132d st. and Lincoln ave	Vegetables and apples.
216	Paul Maniscalco	Individual	204 Franklin st	Fruits, potatoes and all produce.
180	Manniello Bros. & Mayrsohn	Copartnership	185 Reade st	Fruits, vegetables, eggs and raw furs.
217	Andrew C. Martin	Individual	282 Washington st	Vegetables and apples.
728	G. W. Martin & Bro	Copartnership	3–5 Harrison st	Butter, eggs and cheese.
45	Maxfield Fruit Co., Ltd	Corporation	202, 204 Franklin st	Fruits.
218	James Maye	Individual	304 Washington st	All farm produce and fruits.
610	David Mayer	Individual	529 West st., 42–48 Grace ave	Meats and poultry.
386	Maynard & Child	Copartnership	202 Franklin st	Apples and pears.
366	F. S. Maynard & Son	Individual	218 Washington st	Fruits, vegetables and produce.
356	Chas. P. Mecabe & Son	Copartnership	17 Jay st	Butter, cheese and eggs.
219	Aron Mehler	Individual	356 Greenwich st	Farm products, poultry, eggs and butter.
774	Henry Mehrtens	Individual	338 East 102d st	Fruits, vegetables and eggs.
283	J. W. Meloney Co	Copartnership	36 Harrison st	Butter, eggs, live and dressed poultry and calves.
685	Alexander Mersel	Individual	158 Reade st	Butter and eggs.
400	A. E. Meyer & Co	Corporation	134, 136 Park place	Vegetables.

90	H. G. Miles & Co	Copartnership	315 Washington st	Fruits, vegetables, eggs, poultry and general produce.
393	L. B. Miller & Son	Copartnership	145 Reade st	Butter, cheese and eggs.
513	Miller & Bertholf	Copartnership	33d st. and 11th ave	Hay, straw and grain.
730	Miller & Cummings Co., Inc	Corporation	330 Washington st	Fruits and produce.
581	Monfort & Houck	Individual	95 Murray	Fruits.
669	A. H. Moses & Sons	Copartnership	256 Washington st	Fruits and vegetables.
175	Mottus Bros	Copartnership	25 13th ave	Live poultry.
419	W. H. Mowerson & Son	Copartnership	38–48 Lawton ave., West Washington market	Country produce.
295	Michael J. Mulligan	Individual	835½ Washington st	Vegetables and fruits.
543	John E. Murray	Individual	136 Liberty st	Hay and straw.
379	J. Narzisenfeld	Individual	24 Harrison st	Butter, eggs and cheese.
472	Natale & Frank	Copartnership	250 Washington st	Fruits and produce.
544	Nathan Brothers	Copartnership	74 Hudson st	Butter and eggs.
282	J. Neugeboren & Sons	Copartnership	13 Staple st	Dairy products, poultry and eggs.
541	N. Y. & N. J. Produce Co., Inc	Corporation	26th st. and 11th ave	Vegetables and apples.
460	Nichols Bros	Individual	136 Reade st	Butter, eggs and cheese.
187	John Nix & Co	Corporation	281 Washington st	Fruits and vegetables.
768	James N. Norris	Individual	58 Bloomfield st	Live poultry and eggs.
488	North American Fruit Exchange	Corporation	90 West st	Fruits and vegetables.
290	George Oliver & Co	Individual	32–36 Lawton ave., W. Washington market; 28–32 Hewitt ave	Meats, nuts, poultry, fruits and vegetables.
757	Olivit Bros., Inc	Corporation	335 Washington st	General produce.
88	Joseph Oppenheim	Individual	312 Greenwich st	Butter and eggs.
150	B. W. Otis & Co	Copartnership	139 Reade st	Meats, dried beans and peas.
477	William J. Overocker, Inc	Corporation	601 West 33d st	Hay and straw.
292	Paglinghi Bros	Copartnership	323 Washington st	Vegetables, fruits, butter, eggs and country produce.
291	Enos C. Palmer	Individual	106 Murray st	Fruits and vegetables.
409	Charles Pape & Co	Individual	164, 165 West st	Fruits and vegetables.
46	Henry Pape & Co	Individual	138 Park place	Fruits and produce.
804	T. F. Park & Co	Copartnership	192 Reade st	All produce.
812	Park & Allison, Inc	Corporation	344 Washington st	Fruits and vegetables.
399	Parker, Phillips Co	Corporation	204 Franklin st	Vegetables and farm produce.
738	A. Paul, Jr. & Co., Inc	Corporation	50 Grace ave	Meats.
293	R. H. Peck & Co	Individual	26 Harrison st	Butter, cheese and eggs.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
398	I. H. Perrine	Individual	56–60 Hewitt ave., W. Washington market	Fruits, vegetables, meats and eggs.
48	John W. Pfeiffer	Individual	108 Warren st	General fruits and produce.
206	Phenix Cheese Co	Corporation	345, 347 Greenwich st	Dairy products and eggs.
49	Phillips & Sons, Inc	Corporation	277 Washington st	Fruits, vegetables, poultry and meats.
524	Pinney & Geddes	Copartnership	201 West st	Butter and eggs.
584	John Pirung & Co	Corporation	324 Washington st	Fruits and vegetables.
191	Pitt, Barnum & Co	Copartnership	77 Hudson st	Dairy products and eggs.
84	R. S. Porter & Co	Copartnership	137 Reade st	Dried beans and peas.
448	W. D. Power & Co	Copartnership	601 West 33d st	Hay, straw and potatoes.
340	S. T. Pratt	Copartnership	20 Harrison st	Butter, cheese and eggs.
649	Pressner Brothers	Copartnership	30 Jay st	Butter and eggs.
646	Nicholas Puccio	Individual	2011 First ave	Fruits and vegetables.
365	John C. Quick Co	Copartnership	34 Jay st	Dressed poultry, butter, eggs and general produce.
298	Rae & Hatfield, Inc	Corporation	317 Washington st	Fruits and produce.
678	Charles C. Ramey	Individual	431 Produce Exchange	Hay, straw, grain and feed.
720	Read & Garrison	Copartnership	332 Washington st	Dressed poultry and eggs.
618	George N. Reinhardt	Individual	943 Brook ave	Hay, straw and oats.
301	John G. Rettig	Individual	286 Washington st	Fruits and vegetables.
619	Howard S. Rickerson	Individual	96 Warren st	Hay and grain.
556	Judkins J. Riddick & Co	Copartnership	348 Washington st	Fruits and vegetables.
50	Geo. M. Rittenhouse & Co	Copartnership	23–25 Jay st	Butter and eggs.
763	G. H. Rivenburg & Co	Corporation	168 Reade st	Fruits and vegetables.
161	J. H. Roberts Co	Individual	270 Washington st	Fruits and vegetables.
579	Joseph Y. Roberts	Individual	601 West 33d st	Hay and straw.
78	Thos. J. Roberts & Co	Copartnership	181 Reade st	Fruits, vegetables and eggs.
151	John A. Rosenbaum & Co	Copartnership	318 Washington st	Butter, eggs and cheese.

303	S. Rosenfeld Co	Corporation	197 Duane st	Butter, eggs and poultry.
563	M. Roth & Co	Copartnership	185 Duane st	Butter and eggs.
505	Samuel Rottenberg	Individual	183 Duane st	Butter and eggs.
304	B. W. Rowe	Individual	305 Washington st	Fruits, vegetables, poultry, eggs and calves.
222	Rubenstein & London	Copartnership	314 Greenwich st	Butter, eggs and live poultry.
512	P. Ruhlman & Co	Copartnership	261 Washington st	Fruits.
223	David G. Ryer's Sons	Individual	117 Warren st	Fruits and vegetables.
625	Saal Bros	Copartnership	323 Greenwich st	Butter, eggs, cheese and poultry.
483	Alfred A. Saisselin	Individual	114 Warren st	Onions, potatoes, lettuce, celery and carrots.
182	Saitta & Jones	Copartnership	202, 204 Franklin st	Vegetables and fruits.
341	Sandler Bros	Copartnership	111 Warren st	Fruits and produce.
52	Joseph P. Sauer & Co	Individual	293 Washington st	Fruits and vegetables.
53	W. O. Saxton & Co	Individual	174 Duane st	Butter and eggs.
192	Scarborough, Adams & Co	Copartnership	13 Harrison st	Butter and eggs.
202	J. H. Schneider & Co	Corporation	286 Washington st	Fruits and vegetables.
363	John Scholl & Bro	Copartnership	147 Reade st	Butter, eggs and cheese.
54	Louis J. Schwab	Individual	51–63 Grace ave., W. Washington market	Live poultry.
613	Nathan Schweitzer	Copartnership	291 Washington st	Poultry.
189	H. E. Schwitters & Sons	Copartnership	867 Washington st	Fruits and vegetables.
433	Lloyd I. Seaman & Co	Copartnership	148 Reade st	Butter, eggs and cheese.
336	Seckel & Kiernan	Copartnership	361 Greenwich st	Eggs.
683	Seward-Weledniger Co	Individual	43 Little West 12th st	General products.
183	Egbert Seymour	Individual	176 Chambers st	Butter, cheese, eggs, maple syrup and maple sugar.
55	Sgobel & Day	Corporation	204 Franklin st	Fruits and vegetables.
689	R. B. Shimer & Co	Corporation	336 Washington st	Eggs and butter.
319	Adolph Shorr	Individual	153 Reade st	Butter, eggs, cheese, poultry and farm produce.
473	J. C. Shute Co	Corporation	231 Washington st	Fruits.
203	Omar Sickles	Individual	337 Washington st	Fruits and vegetables.
422	Lewis S. Simons	Individual	287 Washington st	Fruits and vegetables.
535	Simons, Shuttleworth & French Co., Inc	Corporation	204 Franklin st	Fruits.
593	Mary Simpson	Individual	47 Little West 12th st	Fruit.
160	Chas. M. Sladkus & Bro	Copartnership	194 Duane st	Butter, eggs and poultry.

LICENSED COMMISSION MERCHANTS — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			NEW YORK — *Continued.*	
56	Smith & Holden	Individual	307, 309 Washington st	Fruits, nuts and vegetables.
152	Smith & Wilson	Copartnership	114 Warren st	Fruits and vegetables.
204	C. V. Smith & Co	Copartnership	340 Washington st	Fruits and farm produce.
57	Lewis Oliver Snackenberg	Individual	98 Murray st	Fruits, vegetables, poultry, dressed calves and hogs.
815	Nathan Solomon	Individual	813 Washington st	Fruits and vegetables.
58	Andrew Spada & Co	Copartnership	204 Franklin st	Fruits and vegetables.
632	Spolter Brothers	Copartnership	134 Columbia st	Butter, eggs and poultry.
227	Steers and Menke	Corporation	20–24 Lawton ave	Eggs, meat and poultry.
82	F. D. Stefano & Co	Copartnership	196 West st	Fruits, vegetables and farm produce.
554	Steinhardt & Kelly	Copartnership	101 Park place	Apples.
548	Joseph Stern	Individual	175 Chambers st	Butter, eggs and poultry.
631	W. H. Story & Co	Copartnership	312 Produce Exchange	Grain, meal and cotton seed oil.
164	Stout & Drost	Copartnership	140 Park place	Fruits and vegetables.
519	H. E. Stout Co	Corporation	315 Washington st	Dressed poultry and eggs.
87	J. D. Stout & Co	Corporation	19 Jay st	Butter, cheese, eggs, beans and produce.
784	Swift & Co., Inc	Corporation	32 Tenth ave	Meats, poultry, eggs, dairy products, nuts and honey.
443	Tancer Bros	Copartnership	154 Reade st	Butter, eggs, poultry and produce.
81	Frank M. Tappen	Individual	117 Warren st	Vegetables and fruits.
389	Thompson, Conklin & Co	Copartnership	100 Hudson st	Beans, dried fruits and canned goods.
367	Titus Bros	Individual	154 West st	Fruits and vegetables.
549	James Tozzi	Individual	192 Reade st	Fruits and farm produce.
442	George Trachtenberg	Individual	360 Greenwich st	Butter and eggs.
455	Trelease & Underhill	Copartnership	330 Greenwich st	Butter, eggs and poultry.
60	Antonio Troiano	Individual	295 Washington st	Fruits and vegetables.
507	Giovanni Troiano	Individual	218 Duane st	Fruits and vegetables.

801	M. Trombetta	Individual	2000 First ave	Fruits and vegetables.
770	George W. Tull & Co., Inc	Corporation	166 West st	Domestic fruits, vegetables and produce.
163	Alfred Turner	Individual	158th st. & Morris ave	Farm produce.
772	Roscoe C. Tygert	Individual	601 W. 33d st	Hay, grain and straw.
200	Adam Ulrich	Individual	20 Gansevoort st	Butter, eggs and cheese.
421	Eugene Utter	Individual	120 Warren st	Fruits and vegetables.
62	Oscar A. Van Derlyn	Individual	293 Washington st	Vegetables and fruits.
378	Van Dyk & Lindsay, Inc	Corporation	236 Washington st	Fruits and vegetables.
604	Van Orden Hay Co	Copartnership	Produce Exchange	Hay and straw.
327	Abram C. Van Sicklen	Individual	21, 22 Harlem market	Fruits and vegetables.
457	George E. Van Vorst, Inc	Corporation	601 West 33d st	Hay, straw and grain.
63	H. C. Vogel & Co	Copartnership	342 Washington st	Fruits, vegetables, poultry, meats and eggs.
167	J. F. Volckman & Co	Copartnership	248 Washington st	Farm produce.
495	John N. Voorhees	Individual	179 Reade st	Fruits and vegetables.
199	Edward M. Vosburgh	Individual	146 Reade st	Eggs and butter.
226	Sanford A. Vroman	Individual	33d st. and 11th ave	Hay and straw.
184	George A. Vroom & Co	Corporation	128 8th ave	Cheese, butter and eggs.
508	Johel M. Wachmann	Individual	40 Harrison st	Butter and eggs.
435	George F. Wagner Co., Inc	Corporation	189 Duane st	Butter, eggs and cheese.
636	S. & W. Waldbaum	Copartnership	175 Chambers st	Butter and eggs.
64	Thomas P. Wallace, Inc	Corporation	116 Warren st	Fruits and vegetables.
369	Hezekiah Warne & Sons	Copartnership	124 Warren st	General produce, poultry, fruits and vegetables.
452	George A. Warner	Individual	158th st. and Morris ave	General country produce.
538	Washburn & Co	Individual	650 West 34th st	Hay and straw.
75	T. A. Watson & Co	Individual	99 Park place	Fruits and vegetables.
185	Charles Weber, Jr	Individual	95 Park place	Fruits.
209	Morris Weinfeld	Individual	362 Greenwich st	Butter, eggs, dressed poultry and calves.
453	M. Weinschel	Individual	34 Harrison st	Butter and eggs.
65	Charles Werner	Individual	33 Loew ave., West Washington market	Live poultry.
66	Samuel Werner, Inc	Corporation	59–63 Loew ave., West Washington market	Live poultry and eggs.
71	Wessels & Co	Copartnership	246 Washington st	Fruits and vegetables.
186	G. J. Westervelt & Co	Individual	117 Warren st	Fruits and vegetables.
317	H. C. Wetterau & Co., Inc	Corporation	286 Greenwich st	Butter, cheese and eggs.

Licensed Commission Merchants — *Continued.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			New York — *Concluded*	
406	William Whispell	Individual	402 E. 103rd st	Fruits, vegetables and general produce.
68	John F. White	Individual	854 Washington st	Vegetables and fruits.
69	A. S. Whitesell	Individual	57, 58 Little West 12th st	Produce and fruits.
397	N. Wiesenfeld	Individual	361 Greenwich st	Butter and eggs.
752	Sol Wigder	Individual	317 Greenwich st	Butter and eggs.
407	J. Wilk	Individual	312 Greenwich st	Butter and eggs.
174	Wilken Bros	Copartnership	20 Harlem market	Butter, eggs and cheese.
787	F. Williams, Inc	Corporation	601 West 33d st	Hay and straw.
773	John W. Williams, Inc	Corporation	34–42 Thompson ave	Country produce, meats and poultry.
634	T. Williams & Co	Copartnership	241 Washington st	Fruits, vegetables, poultry and calves.
381	T. S. Williamson & Bro	Copartnership	Cor. Lawton and Grace aves	Farm produce.
558	Leonard A. Withington	Individual	601 West 26th st	Hay, fruits and vegetables.
655	Hyman Wittner	Individual	348 Greenwich st	Butter, eggs and poultry.
779	Roscoe Conklin Wood, as Receiver	Individual	25–29 Lawton ave., West Washington market	Live and dressed poultry, calves, squabs, etc.
80	Eben B. Woodward	Individual	302 Greenwich st	Butter, cheese, eggs, hay, straw, grain, fruits, nuts, tallow, meat, poultry, honey and maple syrup.
201	Woolley & Hughes	Copartnership	40–50 Hewitt ave., West Washington market	Poultry, calves and pork.
79	Wright & Winsor	Copartnership	12 Harrison st	Butter and eggs.
616	R. A. Yellowlee & Co	Corporation	2 and 4 Stone st	Grain.
225	A. F. Young & Co	Corporation	308 Washington st	Fruits and general produce.
196	W. I. Young & Co	Copartnership	149 Reade st	Butter, eggs and cheese.
205	Zenith Butter and Egg Co	Corporation	355–359 Greenwich st	Butter and eggs.
224	George J. Ziegler & Co	Copartnership	209 Franklin st	Fruits, nuts and vegetables.
43	Zimmer & Dunkak, Inc	Corporation	173, 175 Duane st	Butter and eggs.

			OGDENSBURG.	
280	Mooney & Stewart	Copartnership	8, 10 Lake st	Fruits and vegetables.
			ONEONTA	
784	Swift & Co., Inc	Corporation	54 Broad st	Meat, poultry, eggs, dairy products, nuts and honey.
			OSWEGO	
784	Swift & Co., Inc	Corporation	300 West 1st st	Meat, poultry, eggs, dairy products, nuts and honey.
			PELHAM, WESTCHESTER COUNTY.	
684	C. Rupert & Sons	Corporation		Hay, straw, produce, fruits and grain.
			PORT JERVIS	
784	Swift & Co., Inc	Corporation	29–31 Jervis ave	Meat, poultry, eggs, dairy products, nuts and honey.
			POTSDAM	
206	Phenix Cheese Co	Corporation		Dairy products and eggs.
			POUGHKEEPSIE	
279	McCormick, Hubbs & Co	Corporation	259 Main st	Tropical fruits and produce.
			ROCHESTER	
709	Dugan & Mack	Copartnership	46 Franklin st	Fruits and vegetables.
582	Fox River Butter Co	Corporation	58 Franklin st	Butter, cheese and eggs.
488	North American Fruit Exchange	Corporation	Granite Bldg	Fruits and vegetables.
242	Whipple & Walzer Co	Copartnership	41 Pennsylvania ave	Fruits and vegetables.
			SARANAC LAKE.	
816	Louis Kernochan & Co., Inc	Corporation		Fruit, vegetables and farm produce.
			SARATOGA.	
394	The Ballston Refrigerating Storage Co	Corporation	Caroline st	Apples, potatoes and all farm produce.
784	Swift & Co., Inc	Corporation	50 Church st	Meat, poultry, eggs, dairy products, nuts and honey.

Licensed CommissioneMerchants — *Concluded.*

File number.	Name.	Organization.	Address.	Kind of produce handled.
			SCHENECTADY.	
394	The Ballston Refrigerating Storage Co	Corporation	140 Edison ave	Apples, potatoes and all produce.
740	Friedman Brothers	Copartnership	130 South Center st	Fruits and farm produce.
586	F. E. Ludington & Co	Individual	315 South Center st	Fruits, vegetables, eggs, clams and oysters.
			SCHODACK LANDING	
485	Ransem Gardenier & Sons	Copartnership	Schodack Landing	Hay, straw, potatoes and apples.
			SIDNEY.	
206	Phenix Cheese Co	Corporation		Dairy products and eggs.
			SOUTH EDMESTON	
206	Phenix Cheese Co	Corporation		Dairy products and eggs.
			STAPLETON.	
784	Swift & Co., Inc	Corporation	Prospect st	Meat, poultry, eggs, dairy products, nuts and honey.
			SYRACUSE.	
141	Oliver L. Burton	Individual	508 Pearl st	General produce.
582	Fox River Butter Co	Corporation	202 North West st	Butter, cheese and eggs.
138	D. D. Gregory, Jr., & Bro	Copartnership	560 South Clinton st	Fruits and vegetables.
245	McCullough & Wirkes	Copartnership	512 Pearl st	General produce.
667	James Meager	Individual	215 Walton st	Fruits, vegetables, poultry and eggs.
521	Newcomb & Church Fruit Co., Inc	Corporation	348–352 West Fayette st	Fruits, vegetables and farm produce.
488	North American Fruit Exchange	Corporation	629 Kirk Bldg	Fruit and vegetables.

522	Roscoe Fruit Co	Individual	417 North Clinton st	Vegetables, fruits, eggs, poultry, butter and farm produce.
784	Swift & Co., Inc	Corporation	235 Walton st	Meat, poultry, eggs, dairy products, nuts and honey.
243	Horace Richard Tucker	Individual	520 Pearl st	Fruits, vegetables, eggs, butter and cheese.
494	Simon H. Weaver	Individual	516, 518 South Clinton st	Fruits and vegetables.
			TROY.	
578	Armour & Co	Corporation	2612–2616 Sixth ave	Eggs, meats and dairy products.
651	The Lawlor & Cavanaugh Co	Corporation	Adams, River and First sts	Butter, eggs, cheese and poultry.
284	Morey & Lee	Copartnership	321, 323 River st	Butter, eggs, maple sugar and syrup.
391	Nugent & Powell	Copartnership	214 Fourth st	Fruits and produce.
784	Swift & Co., Inc	Corporation	2788–2790 River st	Meat, poultry, eggs, dairy products, nuts and honey.
			UTICA.	
122	Anthony & Jones Co	Corporation	129 Whitesboro st	Fruits, butter and produce.
392	Griffith M. Jones & Co., Inc	Corporation	121, 123 Whitesboro st	Fruits, vegetables, butter, cheese, eggs, canned goods, dried fruits and manufactured goods.
511	Charles E. Linkie	Individual	76–80 Hotel st	Fruits, vegetables and canned goods.
277	Owen & Griffiths Co	Corporation	125, 127 Whitesboro st	Fruits and vegetables.
520	Lester J. Start	Individual	138, 140 Whitesboro st	Fruits, vegetables and eggs.
784	Swift & Co., Inc	Corporation	49–51 Main st	Meat, poultry, eggs, dairy products, nuts and honey.
			WATERTOWN.	
471	Calen & Co	Copartnership	221–225 Court st	Fruits and farm produce.
176	C. J. Myers & Co	Individual	260 East Main st	Fruits and vegetables.
280	Mooney & Stewart	Copartnership	U. and B. yards	Fruits and vegetables.
240	E. H. Thompson Co	Corporation	200, 202 Solar building	Eggs and dairy products.
			YONKERS.	
784	Swift & Co., Inc	Corporation	23 Locust st	Meat, poultry, eggs, dairy products, nuts and honey.

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STATE OF NEW YORK

DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, Commissioner

BUREAU OF FARMERS' INSTITUTES

Edward van Alstyne, Director

AUG 21 1915

Circular 105

List of Places, Dates, Conductors and Local Correspondents for Farmers' Institutes to be Held in New York State Season 1914-1915

LIST OF PLACES, DATES, CONDUCTORS, AND LOCAL CORRESPONDENTS FOR FARMERS' INSTITUTES TO BE HELD IN NEW YOR[illegible] STATE — SEASON 1914–1915.

COUNTY	PLACE	DATE	
Albany	Medusa	Dec. 1, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, C. J. Waldron, Medusa.
	Rensselaerville	Dec. 2, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, H. H. Bates, Rensselaerville.
	Voorheesville	Jan. 4, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, R. H. Rockwell, Altamont.
	Guilderland Center	Jan. 5, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Wm. B. Mynderse, Guilderland Center.
	Delmar	Jan. 6, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, S. V. Haswell, Delmar.
	Coeymans Hollow	Jan. 7, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Fred R. McCarty, Coeymans Hollow.
Allegany	Caneadea	Feb. 15, 1915	*In charge*, C. R. White. *Local Correspondent*, Charles Mix, R. D. 2, Fillmore.
	Bolivar	Feb. 16, 1915	*In charge*, C. R. White. *Local Correspondent*, E. J. Phillips, Bolivar.
	Friendship	Feb. 17, 1915	*In charge*, C. R. White. *Local Correspondent*, D. P. Barnes, Friendship.
	Scio	Feb. 18, 1915	*In charge*, C. R. White. *Local Correspondent*, George Reynolds, Scio.
	Angelica	Feb. 19, 1915	*In charge*, C. R. White. *Local Correspondent*, George Shaw, Angelica.
	Canaseraga	Feb. 20, 1915	*In charge*, C. R. White. *Local Correspondent*, Frank Coombs, Canaseraga.
	Almond	Feb. 23, 1915	*In charge*, C. R. White. *Local Correspondent*, I. D. Karr, Almond.
	Whitesville	Feb. 25, 1915	*In charge*, C. R. White. *Local Correspondent*, J. C. Crittenden, Whitesville.
Broome	Harpursville	Dec. 23, 1914	*In charge*, R. P. Trask. *Local Correspondent*, C. D. Wasson, Nineveh.
	Deposit	Jan. 4, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, G. W. Flowers, Deposit.
	Windsor	Jan. 5, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, A. B. Griffin, R. D. 6, Susquehanna, Pa.
	North Colesville	Jan. 6, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, S. A. Holcomb, R. F. D., Tunnell.

COUNTY	PLACE	DATE	
Broome (*Cont.*)	Vestal	Jan. 9, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, J. S. Mosher, Vestal.
	Lisle	Feb. 4, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Curtis Day, Lisle.
Cattaraugus	Conewango Valley	Jan. 28, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, C. C. Mason, Conewango Valley.
	Cottage	Feb. 1–2, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Miss Daisy Smith, South Dayton.
	Cattaraugus	Feb. 3, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Ed. Prichard, Cattaraugus.
	Elkdale	Feb. 4, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, W. E. Niles, R. F. D., Salamanca.
	Ashford Hollow	Feb. 5, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, C. H. Hughey, Ashford.
	Delevan	Feb. 11, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Elmer E. Bull, Delevan.
	Ischua	Feb. 12, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, E. N. Williams, R. D., Ischua.
	Hinsdale	Feb. 13, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Mrs. G. M. Brown, R. F. D., Hinsdale.
Cayuga	Fair Haven	Feb. 1, 1915	*In charge*, D. P. Witter. *Local Correspondent*, M. C. Turner, Fair Haven.
	Conquest	Feb. 20, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, E. S. Wilcox, R. D. 39, Pt. Byron.
	Port Byron	Feb. 24, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, W. H. Root, R. D. 36, Port, Byron.
	Sennett	Feb. 26, 1915	*In charge*, J. G. Curtis, *Local Correspondent*, W. S. Tanner, R. D. 42, Weedsport.
	Five Corners	Mar. 2, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, H. C. Powers, Atwater.
	East Venice	Mar. 3, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Chas. E. Stanton, R. D. 18, Moravia.
	Locke	Mar. 16, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, I. J. Main, Locke.
	Moravia	Mar. 17, 1915	*In charge*, A. J. Nicoll, *Local Correspondent*, Arthur Dayton, R. F. D., Moravia.
	Scipioville	Mar. 18, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Edwin T. Casler, Merrifield.
Chautauqua	Forestville	Jan. 13–14, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Mrs. A. M. Keach, Forestville.
	Ripley	Jan. 15–16, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Ora T. Little, Ripley.

COUNTY	PLACE	DATE	
Chautauqua . . (*Cont.*)	Arkwright	Jan. 18, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, D. M. Cole, Fredonia.
	Cassadaga	Jan. 19, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Henry Brewer, Cassadaga.
	Charlotte Center . .	Jan. 20–21, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Luther Cross, Cassadaga.
	Gerry	Jan. 22, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, F. L. Ostrander, Gerry.
	Jamestown	Jan. 23, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, A. A. Van Vleck, West Sixth street, Jamestown.
	Niobe	Jan. 25, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, O. E. Cross, Niobe.
	Mayville	Jan. 26, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Miss Addie Dinsbier, Mayville.
	Stedman	Jan. 27, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, G. G. Swart, Stedman.
	Cherry Creek	Jan. 29–30, 1915	*In Charge*, J. G. Curtis. *Local Correspondent*, A. H. Blaisdell, Cherry Creek.
Chemung	Veteran Grange . . .	Mar. 5, 1915	*In charge*, C. R. White. *Local Correspondent*, Geo. E. Rundle, R. F. D., Horseheads.
	Horseheads	Mar. 6, 1915	*In charge*, C. R. White. *Local Correspondent*, Clifford Shappee, R. F. D. 3, Horseheads.
	Erin	Mar. 8, 1915	*In charge*, C. R. White. *Local Correspondent*, E. E. Welton, Erin.
	Hicks	Mar. 9, 1915	*In charge*, C. R. White. *Local Correspondent*, Alton Loomis, R. F. D. 2, Lockwood.
	Chemung	Mar. 10, 1915	*In charge*, C. R. White. *Local Correspondent*, G. M. Straitor, Chemung.
Chenango	Norwich	Dec. 14-15, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, R. A. Borland, 3 Cook Block, Norwich.
	New Berlin	Dec. 19, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. W. Morse, New Berlin.
	West Bainbridge . .	Dec. 22, 1914	*In charge*, R. P. Trask. *Local Correspondent*, H. H. Lyon, Bainbridge.
	Greene	Jan. 11, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, J. H. Lenderson, Greene.
	Beaver Meadows . .	Jan. 12, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, W. A. Webb, Beaver Meadows.
	McDonough	Feb. 2, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, L. G. Conrad, McDonoug[illegible]
Clinton	Ellenburg Depot . .	Dec. 9, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, E. A. Adams, Ellenburg Depot.
	Ellenburg Center . .	Dec. 10, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Chas. D. Watson, Ellenburg Center.

COUNTY	PLACE	DATE	
Clinton (*Cont.*)	Altona	Dec. 11, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, L. D. Hanley, Altona.
	Champlain	Dec. 12, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, C. R. Ashline, Champlain.
	Saranac	Dec. 14, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Mrs. J. T. Hayes, R. F. D., Cadyville.
	Morrisonville	Dec. 15, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, W. H. Banker, R. D. 4, Plattsburg.
Columbia	Claverack	Feb. 13, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Homer J. Miller, Claverack.
	Livingston	Feb. 15, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, R. G. Patrie, Livingston.
	Mellenville	Feb. 16, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, E. L. Harder, Philmont.
	Copake	Feb. 17, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Frank Sherman, Copake.
	East Chatham	Feb. 18, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Ray R. Lant, East Chatham.
	New Lebanon	Feb. 19, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Chas. H. Smith, East Nassau.
	Spencertown	Feb. 20, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, F. C. Goodrich, R. F. D., East Chatham.
Cortland	Preble	Jan. 29, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, William Root, Preble.
	Cortland	Jan. 30, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Ellis Reed, R. F. D., Cortland.
	Cincinnatus	Feb. 1, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Arthur Cook, Cincinnatus.
	Willett	Feb. 3, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, H. B. Coates, Willett.
	Marathon	Feb. 5, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Manson L. Smith, Marathon.
	Texas Valley	Feb. 6, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Frank Carter, Texas Valley.
	North Harford	Mar. 4, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, A. G. Parker, Harford.
	Freetown Corners	Mar. 5, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Emory Cobb, Marathon.
	Homer	Mar. 6, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Egbert Hull, Homer.
Delaware	Hancock	Dec. 7, 1914	*In charge*, R. P. Trask. *Local Correspondent*, C. L. Taylor, Hancock.
	Downsville	Dec. 8, 1914	*In charge*, R. P. Trask. *Local Correspondent*, E. M. Dann, Downsville

COUNTY	PLACE	DATE	
Delaware..... (*Cont.*)	Walton...........	Dec. 9, 1914	*In charge*, R. P. Trask. *Local Correspondent*, J. J. Barlow, Beerston
	Sidney Center.....	Dec. 10, 1914	*In charge*, R. P. Trask. *Local Correspondent*, A. M. Rutenber, Sidney Center.
	Franklin.........	Dec. 11, 1914	*In charge*, R. P. Trask. *Local Correspondent*, A. W. Rowell, Franklin.
	East Meredith....	Dec. 12, 1914	*In charge*, R. P. Trask. *Local Correspondent*, E. E. Stebbins, East Meredith.
	Stamford.........	Dec. 14, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Joseph Murphy, Stamford.
	Halcottsville......	Dec. 18, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Amos R. Sanford, Halcottsville.
Dutchess.....	Pawling..........	Feb. 1, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Harry Wanzer, Pawling.
	Unionvale........	Feb. 3, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, O. C. L. Abel, Verbank.
	Moores Mills.....	Feb. 4, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Jas. W. Skidmore, Pleasant Valley.
	Wiccopee.........	Feb. 5, 1915	*In charge*, R. P. McPherson *Local Correspondent*, J. S. Warren, Hopewell Junction.
	Myers Corners....	Feb. 6, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Oscar R. Widmer, Wappingers Falls.
	Clinton Corners...	Feb. 8–9, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, M. E. Knapp, Millbrook.
	Hyde Park.......	Feb. 10, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Benj. Haviland, Hyde Park.
	Pleasant Plains....	Feb. 11, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Fred C. Barker, Staatsburg.
	Upper Red Hook..	Feb. 12, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Curtis Fraleigh, Red Hook.
Erie.........	Clarence Center...	Jan. 8, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, G. D. Carmer, Clarence Center.
	Bowmansville.....	Jan. 9, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Leo Parker, Forks.
	Collins Center....	Jan. 11, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, J. W. Taft, Collins Center.
	Brant............	Jan. 12, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Martin Krull, R. F. D Irving.
	Springville........	Feb. 6, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, W. H. Pingrey, Springville.
	Griffins Mills....	Feb. 8, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, R. C. Grover, West Falls.
	Hunters Creek....	Feb. 9, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, E. E. Sleeper, Holland.

COUNTY	PLACE	DATE	
(Cont.)	Chaffee	Feb. 10, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, W. A. Briggs, Chaffee.
	Alden	Feb. 11, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, E. W. Gilmore, Alden.
Essex	Olmstedville	Oct. 29, 1914	*In charge*, William Hotaling. *Local Correspondent*, Frank M. La Bar, Minerva.
	Jay	Dec. 16, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Mrs. Anna S. Kent, Jay.
	Willsboro	Dec. 17, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, E. H. Severance, Willsboro.
	Westport	Dec. 18, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, G. F. Braisted, Westport.
	Crown Point	Dec. 19, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, W. S. Green, Crown Point.
	Moriah	Dec. 21, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, G. W. Witherbee, Moriah Center.
Franklin	Chateaugay	Dec. 8, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, G. N. Stuart, Chateaugay.
	Ft. Covington	Jan. 4, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Mrs. M. P. Merrick, Ft. Covington.
	Bombay	Jan. 5, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Geo. Rockwood, Bombay.
	Brushton	Jan. 6–7, 1915	*In charge*, D. P. Witter. *Local Correspondent*, H. M. Aldrich, R. F. D., North Bangor.
	Malone	Jan. 8–9, 1915	*In charge*, D. P. Witter. *Local Correspondent*, L. L. Foote, R. F. D. 4, Malone.
Genesee	South Byron	Jan. 5, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, W. M. Brockway, South Byron.
	Elba	Jan. 6, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, J. S. Wilford, Elba.
	Oakfield	Jan. 7, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, B. W. Taylor, Batavia.
	Corfu	Feb. 8, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, D. C. Higgins, Corfu.
	Darien	Feb. 9, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Nelson Harper, Darien Center.
	Bethany Center	Feb. 12, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Harry Wolf, Linden.
	Alexander	Feb. 13, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Earl Kidder, Alexander.
	Pavilion Center	Feb. 24, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Geo. Branch, Pavilion.
	Fort Hill	Feb. 25, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, D. J. Renegar, R. D. 37, Le Roy.
Greene	Freehold	Nov. 30, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, R. T. Story, Freehold.

COUNTY	PLACE	DATE	
Greene (*Cont.*)	Prattsville	Dec. 16, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Willis Chatfield, Pra[illegible]ville.
	Halcott Center	Dec. 17, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Myron Morse, Halcott Center.
	West Coxsackie	Jan. 8, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, F. W. Cole, West Coxsackie.
	Leeds	Jan. 9, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, D. J. Hamm, Leeds.
Herkimer	Van Hornesville	Mar. 3, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, H. A. Mixer, R. F. D. 1, Jordanville.
	Jordanville	Mar. 4, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, E. L. Walrath, R. D. 2, Richfield.
	West Winfield	Mar. 5, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Clyde S. Code, R. F. D., West Winfield.
	Frankfort	Mar. 6, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Rufus Smith, Frankfort.
	Dolgeville	Mar. 8, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, A. J. Dunckel, Fort Plain.
	Poland	Mar. 9, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Fred Cruikshank, Poland.
	Russia	Mar. 10, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, W. H. Hughes, R. F. D., Barneveld.
Jefferson	Philadelphia	Nov. 30, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Elmer E. Dresser, Philadelphia.
	Adams Center	Dec. 4, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Norris Maltby, Adams Center.
	Henderson	Dec. 7, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Henry Bonnett, R. D., Adams.
	Hounsfield	Dec. 8, 1914	*In charge*, D. P. Witter. *Local Correspondent*, A. J. Horton, R. F. D., E. Watertown.
	Calcium	Dec. 9, 1914	*In charge*, D. P. Witter. *Local Correspondent*, B. L. Johnson, Evans Mills.
	St. Lawrence	Dec. 10, 1914	*In charge*, D. P. Witter. *Local Correspondent*, V. P. Comins, Clayton.
	La Fargeville	Dec. 11, 1914	*In charge*, D. P. Witter. *Local Correspondent*, A. W. Beckwith, [illegible] Fargeville.
	Dexter	Dec. 12, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Fred E. George, Limerick.
	Theresa	Dec. 14, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Jesse La Fave, Theresa.
	Plessis	Dec. 15, 1914	*In charge*, D. P. Witter. *Local Correspondent*, A. H. Rowell, La Fargeville.

COUNTY	PLACE	DATE	
erson (*Cont.*)	Natural Bridge	Dec. 17, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Earl H. Allen, Natural Bridge.
	Carthage	Dec. 19, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Eugene Lewis, R. F. D. 1, Carthage.
Lewis	West Leyden	Nov. 21, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Fred P. Grubel, West Leyden.
	Grieg	Nov. 23, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, W. J. Dominick, R. F. D., Lyons Falls.
	Talcottville	Nov. 24, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Oscar C. Thayer, Constableville.
	Barnes Corners	Dec. 5, 1914	*In charge*, D. P. Witter. *Local Correspondent*, L. S. Brown, R. D. 2, Adams.
	Denmark	Dec. 18, 1914	*In charge*, D. P. Witter. *Local Correspondent*, Elon W. Cook, Denmark.
	Beaver Falls	Dec. 21–22, 1914	*In charge*, D. P. Witter. *Local Correspondent*, E. E. Widmyer, Beaver Falls.
Livingston	Greigsville	Feb. 22, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, K. H. Johnson, Greigsville.
	Linwood	Feb. 23, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Neil C. McCall, Linwood.
	Caledonia	Feb. 26–27, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Merton Phelps, Caledonia.
	Conesus	Mar. 1, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Chas. McGinty, Conesus.
	Springwater	Mar. 2, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Scott W. Swarts, Springwater.
	Dansville (Farmers' Days)	Mar. 9-10-11, 1915	*In charge*, Jared Van Wagenen, Jr. *Correspondents:* Livingston Co.— J. M. Foster, Dansville. Allegany Co.— F. C. Smith, Wellsville. Steuben Co.— E. F. Gleason, Hammondsport. Wyoming Co.— H. M. Bowen, Perry. Wyoming Co.— S. L. Strivings, Castile.
Madison	Nelson	Nov. 19, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, K. W. Jones, Nelson.
	Hubbardsville	Dec. 21, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Fay I. Rhodes, R. F. D., Hubbardsville.
	Brookfield	Dec. 22-23, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, C. W. Camanga, West Edmeston.
	Earlville	Jan. 13, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, N. M. Congdon, Earlville.
	Hamilton	Jan. 14, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, J. G. Patterson, Hamilton.
	Stockbridge	Jan. 15-16, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, C. E. Love, Munnsville.

COUNTY	PLACE	DATE	
Madison..... (*Cont.*)	Madison.........	Jan. 18, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, W. D. Taylor, Solsville.
	Erieville..........	Jan. 20, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Mrs. T. T. Faintor, Erieville.
	Canastota........	*Mar. 15–16, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Mrs. E. C. Goodell, Canastota.
	Fenner...........	Mar. 16, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, J. L. O'Hara, R. D. 1, Cazenovia.
	De Ruyter.......	*Mar. 17–18, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Geo. B. Burdick, De Ruyter.
Monroe......	Churchville.......	Jan. 4, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Allyn S. Hill, Churchville.
	Brockport........	Feb. 26-27, 1915	*In charge*, D. P. Witter. *Local Correspondent*, E. W. Brigham, Brockport.
	Webster..........	Mar. 5–6, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Geo. W. Dunn, Webster.
	Greece...........	Mar. 8, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Judson Kenyon, Barnard.
	Spencerport.......	Mar. 9, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Jas. Adams, Spencerport.
	Gates Center.....	Mar. 10, 1915	*In charge*, D. P. Witter. *Local Correspondent*, John C. Curry, Jr., Gates.
	West Henrietta....	Mar. 11, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Frank L. Martin, West Henrietta.
	Pittsford.........	Mar. 12, 1915	*In charge*, D. P. Witter. *Local Correspondent*, J. M. Todd, Pittsford.
	Fairport..........	Mar. 13, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Chas. J. Stefen, Fairport.
Montgomery..	Minaville.........	Feb. 24, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Howard Hewitt, Minaville.
	Glen.............	Feb. 25, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, C. F. Van Horn, Glen.
	Charleston Four Corners........	Feb. 26, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, O. A. Tillapaugh, R. D. 1, Sloansville.
	Canajoharie, Seiber's Lane Grange.........	Feb. 27, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, C. L. St. John, Ca[illegible]joharie.
	Freysbush........	Mar. 1, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, F. J. Hiller, R. D. 3, Fort Plain.
	St. Johnsville.....	Mar. 2, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Lou D. MacWethy, St. Johnsville.

* Second day under direction of Director F. G. Helyar, State School of Agriculture, Morrisville.

COUNTY	PLACE	DATE	
Nassau	Mineola	Jan. 20–21, 1915	*In charge,* Jared Van Wagenen, Jr. *Local Correspondent,* L. R. Simons, Mineola.
Niagara	Pendleton Center	Feb. 15, 1915	*In charge,* D. P. Witter. *Local Correspondent,* L. J. T. Richards, R. D. 4, Lockport.
	Pekin	Feb. 16, 1915	*In charge,* D. P. Witter. *Local Correspondent,* Chas. E. Mabon, Sanborn.
	Ransomville	Feb. 17, 1915	*In charge,* D. P. Witter. *Local Correspondent,* W. D. Wisner, Ransomville.
	Newfane	Feb. 18, 1915	*In charge,* D. P. Witter. *Local Correspondent,* Elma McKee, Newfane.
	Johnson's Creek	Feb. 19, 1915	*In charge,* D. P. Witter. *Local Correspondent,* W. W. Prudom, Middleport.
	Middleport	Feb. 20, 1915	*In charge,* D. P. Witter. *Local Correspondent,* M. D. Williams, Middleport.
	Rapids	Feb. 22, 1915	*In charge,* D. P. Witter. *Local Correspondent,* C. Hull Burdick, Lockport.
	Barker	Mar. 1, 1915	*In charge,* D. P. Witter. *Local Correspondent,* John Conley, Barker.
Oneida	Boonville	Nov. 20, 1915	*In charge,* A. J. Nicoll. *Local Correspondent,* Silas B. Sherman, R. D. 3, Boonville.
	Camden	Nov. 30, 1915	*In charge,* D. P. Witter. *Local Correspondent,* W. G. Seubert, McConnellsville
	Knoxboro	Jan. 19, 1915	*In charge,* A. J. Nicoll. *Local Correspondent,* Chas. D. Fairchild, R. F. D., Oriskany Falls.
	Marcy	Mar. 11, 1915	*In charge,* R. P. McPherson. *Local Correspondent,* Homer. A. Humphrey, Marcy.
	Sauquoit	Mar. 12, 1915	*In charge,* R. P. McPherson. *Local Correspondent,* Seth W. Smith, R. D. 2, Sauquoit.
	Rome	Mar. 13, 1915	*In charge,* R. P. McPherson. *Local Correspondent,* Wm. A. Searle, Chamber of Commerce, Rome.
Onondaga	North Manlius	Jan. 21, 1915	*In charge,* A. J. Nicoll. *Local Correspondent,* M. J. Costello, R. D. 1, Kirkville.
	Baldwinsville	Jan. 22-23, 1915	*In charge,* D. P. Witter. *Local Correspondent,* Burt Giddings, Baldwinsville.
	Manlius	Jan. 22-23, 1915	*In charge,* A. J. Nicoll. *Local Correspondent,* C. F. Ferris, R. D. 2, Manlius.
	Camillus	Jan. 25, 1915	*In charge,* A. J. Nicoll. *Local Correspondent,* V. D. Casson, R. D. 2, Camillus.
	Lysander	Jan. 25, 1915	*In charge,* D. P. Witter. *Local Correspondent,* W. N. Reddout, Lysander.
	Borodino	Jan. 26, 1915	*In charge,* A. J. Nicoll. *Local Correspondent,* Ellis Patterson, Borodino.

COUNTY	PLACE	DATE	
Onondaga (*Cont.*)	South Onondaga	Jan. 27, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, A. B. Fenner, R. D. Syracuse.
	La Fayette	Jan. 28, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Wm. H. Park, La Fayette.
	Jordan	Feb. 25, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, H. J. Rickard, Jordan.
Ontario	Phelps	Feb. 4, 1915	*In charge*, D. P. Witter. *Local Correspondent*, M. M. Hughes, Clifton Springs.
	Manchester	Feb. 5, 1915	*In charge*, D. P. Witter. *Local Correspondent*, R. R. McLouth, R. F. D., Shortsville.
	Reed Corners	Feb. 6, 1915	*In charge*, D. P. Witter. *Local Correspondent*, James Roat, Canandaigua.
	West Bloomfield	Feb. 15, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Harry Taft, West Bloomfield.
	Victor	Feb. 16, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, A. G. Aldridge, Victor.
	Farmington	Feb. 17, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Jos. I. Green, Macedon.
	Naples	Mar. 4, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, M. M. Wheeler, Naples.
	Bristol Springs	Mar. 5, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Elmer N. Coye, Naples.
Orange	Port Jervis	Jan. 16, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Sidney T. Braman, Chamber of Commerce, Port Jervis.
	Balmville	Jan. 18, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Gurnsey Sheeley, R. D. 1, Newburg.
	Middletown	Jan. 19, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Willard Clark, Middletown.
	Unionville	Jan. 20, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Mrs. Mary B. Stoll, Unionville.
	Otisville	Jan. 21, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, L. H. Mapes, Howells.
	Pine Bush	Jan. 22, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Elmer Van Keuren, Pine Bush.
	Bullville	Jan. 23, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, I. V. Ellis, Bullville.
Orleans	West Shelby	Feb. 23, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Victor H. Harding, R. F. D., Middleport.
	East Shelby	Feb. 24, 1915	*In charge*, D. P. Witter. *Local Correspondent*, B. C. Roberts, Medina.
	Clarendon	Feb. 25, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Herbert Allis, Holley.
	Lyndonville	Mar. 2, 1915	*In charge*, D. P. Witter. *Local Correspondent*, C. H. I. Potter, Lyndonville.
	Kendall	Mar. 3, 1915	*In charge*, D. P. Witter. *Local Correspondent*, L. M. Wellman, Kendall.

COUNTY	PLACE	DATE	
Orleans . . . . . . (*Cont.*)	Murray (Sandy Creek).	Mar. 4, 1915	*In charge,* D. P. Witter. *Local Correspondent,* L. S. Walter, R. D. 5, Holley.
	Albion . . . . (Farmers' Days).	Mar.15-16-17, 1915	*In charge,* Jared Van Wagenen, Jr. *Correspondents:* Orleans Co.—John Bidelman, Albion. Niagara Co.—E. J. McClew, Newfane. " "—E. H. Anderson, Lockport. Monroe Co.—L. A. Toan, Rochester.
Oswego	Amboy Center	Dec. 1, 1914	*In charge,* D. P. Witter. *Local Correspondent,* Fred Jamieson, R. F. D. 1, Williamstown.
	Williamstown	Dec. 2, 1914	*In charge,* D. P. Witter. *Local Correspondent,* E. N. Harris, Williamstown.
	Lacona	Dec. 3, 1914	*In charge,* D. P. Witter. *Local Correspondent,* A. R. Stevens, Lacona.
	Oswego . . . . (Farmers' Days).	Dec. 7-8-9, 1914	*In charge,* Jared Van Wagenen, Jr. *Correspondents;* Oswego Co.—E. V. Underwood, Farm Bureau Mgr., Oswego. Oswego Co.—F. H. Tullar, Oswego. " " Mrs. Anna B. Weed, Secy., Pomona George, Orwell. Jefferson Co.—F. E. Robertson, Watertown. Oneida Co —G. W. Bush, Utica. Onondaga Co.—S. A. Martin, Syracuse.
	Pulaski	Jan. 18, 1915	*In charge,* D. P. Witter. *Local Correspondent,* Benj. H. Frary, R. D. 4, Pulaski.
	Mexico	Jan. 19, 1915	*In charge,* D. P. Witter. *Local Correspondent,* D. D. Fennell, Jr., Mexico.
	North Scriba	Jan. 20, 1915	*In charge,* D. P. Witter. *Local Correspondent,* O. H. Cornwell, R. D. 1, Oswego.
	Parish	Jan. 21, 1915	*In charge,* D. P. Witter. *Local Correspondent,* M. L. Moran, Parish.
	Bernhards Bay	Jan. 26, 1915	*In charge,* D. P. Witter. *Local Correspondent,* H. E. Myers, Bernhards Bay.
	Central Square	Jan. 27, 1915	*In charge,* D. P. Witter. *Local Correspondent,* J. M. Snow, Central Square.
	Pennellville	Jan. 28, 1915	*In charge,* D. P. Witter. *Local Correspondent,* F. W. Morgan, R. F. D. 2, Phoenix.
	Hannibal	Jan. 29–30,1915	*In charge,* D. P. Witter. *Local Correspondent,* P. H. Welling, Hannibal.
Otsego	Cherry Valley	Dec. 9, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* H. Cassart, Cherry Valley.
	Pierstown	Dec. 10, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* Geo. T. Burnell, R. F. D., Cooperstown.
	Westville	Dec. 11, 1914	*In charge,* A. J. Nicoll. *Local Correspondent,* Geo. O. Chamberlain, R. F. D., Schenevus.

COUNTY	PLACE	DATE	
Otsego……. (*Cont.*)	Fly Creek……..	Dec. 12, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, S. H. Elderkin, Fly Cre
	Mt. Vision……..	Dec. 16, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. H. Straight, R. D. 2, Mt. Vision.
	Morris………..	Dec. 17, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, A. H. Tillson, West Oneonta.
	Edmeston……..	Dec. 18, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Chester Pope, Edmeston.
	Worcester……..	Dec. 19, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Noah Vredenburg, R. D. 3, Worcester.
	Otego…………	Dec. 21, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Webster J. Birdsall, Otego.
Putnam……	Adams Corners….	Jan. 28, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Geo. F. Barmore, Adams Corners.
	Mahopac………	Jan. 29, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, F. J. Ganong, Crafts.
	Patterson………	Feb. 2, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, E. F. Hayt, Brewster.
Rensselaer….	Berlin…………	Dec. 14, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Arthur Cowee, Berhn.
	Hoosick Falls…..	Dec. 15, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Jay C. Cottrell, Hoosick Falls.
	Johnsonville……	Dec. 16, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Wm. A. Gage, Johnsonville.
	Eagle Mills…….	Dec. 17, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, J. H. Potter, Eagle Mills.
	Raymertown……	Dec. 18, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, E. L. Button, Melrose.
	West Sand Lake…	Dec. 22, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, I. J. Cipperly, West Sand Lake.
	Melrose……….	Feb. 22, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, C. B. Hanaman, R. D. 1, Melrose.
Rockland…..	Tallmans………	Jan. 25-26, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Thomas Husson, Pomona.
St. Lawrence..	Fine………….	Dec. 1, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, L. G. Harris, Fine.
	Edwards………	Dec. 2, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, W. O. Kerr, Edwards.
	Russell……….	Dec. 3, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, L. B. Hatch, R. F. D. 2, Hermon.
	Rensselaer Falls…	Dec. 4, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, H. B. Hammond, Rensselaer Falls.
	Massena………	Dec. 5, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, W. V. Clemens, Massena.

COUNTY	PLACE	DATE	
St. Lawrence. (*Cont.*)	Winthrop	Dec. 7, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, G. G. Gillette, Winthrop.
	Brier Hill	Dec. 16, 1914	*In charge*, D. P. Witter. *Local Correspondent*, B. B. Lane, Hammond.
	Lawrenceville	Jan. 11, 1915	*In charge*, D. P. Witter. *Local Correspondent*, J. P. Hourihan, No. Lawrence.
	Nicholville	Jan. 12, 1915	*In charge*, D. P. Witter. *Local Correspondent*, J. H. Smith, Nicholville.
	Lisbon	Jan. 13, 1915	*In charge*, D. P. Witter. *Local Correspondent*, J. Leslie Craig, Lisbon.
	Waddington	Jan. 14, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Edward L. Fay, Waddington, R. D. 1.
	Norfolk	Jan. 15, 1915	*In charge*, D. P. Witter. *Local Correspondent*, C. A. Whittaker, Raymondville.
	Potsdam	Jan. 16, 1915	*In charge*, D. P. Witter. *Local Correspondent*, B. T. Scott, Potsdam.
Saratoga	Wilton	Oct. 31, 1914	*In charge*, William Hotaling. *Local Correspondent*, John H. Westfall, R. D 2, Saratoga Springs.
	Wayville	Dec. 1, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. R. Putnam, Wayville.
	Gansevoort	Dec. 2, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, A. Heywood Cary, R. D. 1, Gansevoort.
	Malta	Dec. 19, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. Olmsted, R. D. 3, Mechanicville.
	Clifton Park Center	Dec. 21, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, John H. Peck, Rexford.
	Galway	Feb. 23, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, F. L. Smith, R. D. 1, Ballston Spa.
	Schuylerville (Farmers' Days)	Mar. 23–24–25, 1915	*In charge*, Jared Van Wagenen, Jr. *Correspondents:* Saratoga Co.— A. C. Lottridge, Schuylerville. Washington Co— H. L. Beadle, Fly Summit. Rensselaer Co.— Jay C. Cottrell, Hoosick Falls. Warren Co.— Jay Gelder, Glens Falls. Schenectady Co.— J. A. Ennis, Schenectady.
Schenectady	Duanesburg	Dec. 28, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Bert Koons, R. D. 2, Delanson.
	Pattersonville	Dec. 29, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, I. F. Patterson, Pattersonville.
	Glenville	Dec. 30, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Mina Van Epps, Hoffmans.
Schoharie	Broome Center	Dec. 3, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, E. P. Cook, R. F. D., Gilboa

COUNTY	PLACE	DATE	
Schoharie.... (*Cont.*)	Breakabeen.......	Dec. 4, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, W. H. Travis, R. D. Middleburgh.
	Fultonham.......	Dec. 5, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Moses Lawyer, Fultonham.
	Carlisle..........	Dec. 7, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, Myron Brown, R. F. D., Sloansville.
	Hyndsville........	Dec. 8, 1914	*In charge*, A. J. Nicoll. *Local Correspondent*, B. C. Holmes, Hyndsville.
	Manorkill........	Dec. 15, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Geo. W. Van Steenburg, Manorkill.
Schuyler.....	Wayne...........	Nov. 19, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, D. E. Hoover, R. F. D., Keuka.
	Townsend........	Feb. 10, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Geo. E. Raplee, R. D. 3, Watkins.
	Reading Center...	Mar. 11, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, G. W. McNermer, Reading Center.
	Valois............	Mar. 11, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, L. W. German, Valois.
	Burdett..........	Mar. 12, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, W. K. Mulligan, Burdett.
	Catherine........	Mar. 13, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Mrs. M. H. Hewett, Alpine.
Seneca.......	Waterloo.........	Mar. 6, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, H. H. Bonnell, R. F. D., Waterloo.
	Romulus.........	Mar. 8, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, C. W. Lisk, Romulus.
	Covert...........	Mar. 9, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Fred Lunger, Covert.
	Ovid Grange Hall, Scotts Corners..	Mar. 10, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, G. B. Akins, Ovid Center.
Steuben......	North Urbana....	Nov. 20, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Eber F. Gleason, R. D. 1, Hammondsport.
	Savona...........	Nov. 21, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Isaac Johnston, Savona.
	Prattsburg........	Nov. 23, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. H. Babcock, R. D. Prattsburg.
	Ingleside.........	Nov. 24, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, C. E. Noble, R. F. D., 3, Prattsburg.
	Stephens Mills....	Feb. 22, 1915	*In charge*, C. R. White. *Local Correspondent*, Smith Harding, R. D. 2, Hornell.
	Greenwood.......	Feb. 24, 1915	*In charge*, C. R. White. *Local Correspondent*, T. N. Blair, Greenwood.

COUNTY	PLACE	DATE	
Steuben (*Cont.*)	Howard	Feb. 26, 1915	*In charge*, C. R. White. *Local Correspondent*, Bert Bennett, R. D. 4, Hornell.
	Bath	Feb. 27, 1915	*In charge*, C. R. White. *Local Correspondent*, H. S. Emerson, Bath.
	Thurston	Mar. 1, 1915	*In charge*, C. R. White. *Local Correspondent*, C. N. Risley, R. F. D., Campbells.
	Rathbone	Mar. 2, 1915	*In charge*, C. R. White. *Local Correspondent*, Elroy O. Hanna, Cameron Mills.
	Addison	Mar. 3, 1915	*In charge*, C. R. White. *Local Correspondent*, L. J. Haynes, Addison.
	Atlanta	Mar. 3, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, C. G. Gray, North Cohocton.
	Caton	Mar. 4, 1915	*In charge*, C. R. White. *Local Correspondent*, S. B. Hill, R. D. 2, Corning.
Suffolk	Bridgehampton	Jan. 12-13, 1915	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, H. T. Haney, Bridgehampton.
	Orient	Jan. 14, 1915	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, L. M. Young, Orient.
	Southold	Jan. 15, 1915	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, G. H. Smith, Peconic.
	Sound Avenue	Jan. 16, 1915	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, John R. Reeve, R. F. D., Riverhead.
	Port Jefferson	Jan. 18, 1915	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Harry Terry, Terryville.
	East Northport	Jan. 19, 1915	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, F. B. Smith, Ft. Salonga.
Sullivan	Lake Huntington	Nov. 30, 1914	*In charge*, R. P. Trask. *Local Correspondent*, H. J. Tyler, Cochecton Center.
	Youngsville	Dec. 1, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Wm. Rittershausen, Youngsville.
	Bloomingburg	Dec. 2, 1914	*In charge*, R. P. Trask. *Local Correspondent*, H. S. Riede, Box 114, Bloomingburg.
	Hurleyville	Dec. 3, 1914	*In charge*, R. P. Trask. *Local Correspondent*, F. A. Durland, Hurleyville.
	Grahamsville	Dec. 4, 1914	*In charge*, R. P. Trask. *Local Correspondent*, Henry R. Groo, Grahamsville.
	Liberty	Dec. 5, 1914	*In charge*, R. P. Trask. *Local Correspondent*, A. J. D. Wedemeyer, Liberty.
Tioga	Flemingville	Jan. 8, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Fred Miller, R. F. D., Owego.
	Nichols	Mar. 11, 1915	*In charge*, C. R. White. *Local Correspondent*, S. M. Lounsberry, Lounsberry.

COUNTY	PLACE	DATE	
Tioga........ (*Cont.*)	Apalachin........	Mar. 12-13, 1915	*In charge*, C. R. White. *Local Correspondent*, Chas. F. Giles, Apalach[illegible]
	Barton Center....	Mar. 15, 1915	*In charge*, C. R. White. *Local Correspondent*, Walter A. Wheeler, R. D. 2, Waverly.
	Spencer..........	Mar. 16, 1915	*In charge*, C. R. White. *Local Correspondent*, Geo. S. Robinson, Spencer.
Tompkins....	Speedsville.......	Jan. 7, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Frank E. Townsend, Berkshire.
	East Lansing.....	Feb. 27, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, D. C. DeCamp, R. D. 12, Groton.
	Lansing..........	Mar. 1, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Charles Moseley, Ludlowville.
	Slaterville Springs.	Mar. 15, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Wm. C. Gallager, Slaterville Springs.
	Danby...........	Mar. 17, 1915	*In charge*, C. R. White. *Local Correspondent*, T. G. Miller, Danby.
	Enfield Center....	Mar. 18, 1915	*In charge*, C. R. White. *Local Correspondent*, Fred Rumsey, Newfield.
	Freeville.........	Mar. 18, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, M. L. Stanton, Freeville.
Ulster........	Woodstock.......	Jan. 11, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, C. N. Riseley, Woodstock.
	Lake Katrine.....	Jan. 12, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, C. E. Davis, R. D. 4, Saugerties.
	Stone Ridge......	Jan. 13, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, C. C. Hardenburg, Stone Ridge.
	Gardiner.........	Jan. 14, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Joseph Deyo, Gardiner.
	Plattekill.........	Jan. 15, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, E. F. Soule, R. D. 2, Gardiner.
Warren......	Chestertown......	Oct. 27, 1914	*In charge*, William Hotaling. *Local Correspondent*, John B. Brown, Chestertown.
	Queensbury.......	Oct. 28, 1914	*In charge*, William Hotaling. *Local Correspondent*, Glenn A. Hubbell, R. D. 1, Glens Falls.
	Wevertown.......	Oct. 30, 1914	*In charge*, William Hotaling. *Local Correspondent*, Frank C. Hooper, Nor[illegible] River.
	Glens Falls.......	Dec. 12, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. J. Haviland, Glens Falls.
Washington...	Fort Miller.......	Nov. 30, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, F. B. Hilton, Thomson.

COUNTY	PLACE	DATE	
shington... (*Cont.*)	Fort Ann	Dec. 3, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, E. J. Needham, R. F. D., Hudson Falls.
	North Granville	Dec. 4, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Geo. S. Chapin, R. D. 2, Smiths Basin.
	Hartford	Dec. 5, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, J. H. Beadle, Hartford.
	Argyle	Dec. 7, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, R. H. Stewart, Fort Edward.
	West Hebron	Dec. 8, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. E. Getty, R. F. D., Granville.
	Salem	Dec. 9, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. S. Barker, Salem.
	Cambridge	Dec. 10, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, W. J. Davis, Cambridge.
	Easton	Dec. 11, 1914	*In charge*, R. P. McPherson. *Local Correspondent*, Jacob F. Pratt, R. F. D. 1, Greenwich.
	Putnam	Dec. 22, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Henry L. Roberts, Putnam Station.
	Whitehall	Dec. 23, 1914	*In charge*, Jared Van Wagenen, Jr. *Local Correspondent*, Chas. A. Johnson, P. O. Box 72, Whitehall.
Wayne	Red Creek	Feb. 2, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Maj. G. W. Brinkerhoff, Red Creek.
	Huron	Feb. 3, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Mrs. E. G. Hatcher, Wolcott.
	Clyde	Feb. 18, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Chas. Roy, Clyde.
	South Butler	Feb. 19, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, W. E. Hall, South Butler.
	Marion	Mar. 8, 1915	*In charge*, D. P. Witter. *Local Correspondent*, C. H. Lookup, P. O. Box 84, Marion.
	Savannah	Mar. 9–10, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Gipson Mead, Savannah.
	Lincoln	Mar. 15, 1915	*In charge*, D. P. Witter. *Local Correspondent*, J. C. Hulbert, Ontario.
	Lyons (Farmers' Days)	Mar. 16–17–18, 1915	*In charge*, D. P. Witter. *Correspondents:* Wayne Co.— D. Everett McClelland, Lyons. “ “ — D. V. Teller, Lyons. “ “ — Gipson Mead, Savannah. “ “ — A. B. Katkamier, Macedon. “ “ — C. S. Madan, Red Creek. “ “ — J. C. Hulbert, Lincoln. Monroe Co.— Lewis A. Toan, Rochester. Cayuga Co.— E. W. Mitchell. Ontario Co.— J. Q. Wells, Shortsville. Cayuga Co.— J. R. Teal, Auburn.

COUNTY	PLACE	DATE	
Westchester...	Cortland Grange, Peekskill.	Jan. 27, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Miss Emma Tice, Pee kill.
	Lincolndale.......	Jan. 30, 1915	*In charge*, R. P. McPherson. *Local Correspondent*, Rev. Bro. Barnabas, Lincolndale.
Wyoming.....	Cowlesville.......	Feb. 10, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, R. J. Patch, Cowlesville.
	Varysburg........	Feb. 15, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Lester L. Glor, Varysburg.
	Arcade...........	Feb. 16, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, George Hogue, Arcade.
	Curriers..........	Feb. 17, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, Charles Day, Curriers.
	Bliss.............	Feb. 18, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, E. J. Foote, Bliss.
	Castile...........	Feb. 19, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, S. L. Strivings, Castile.
	Warsaw..........	Feb. 20, 1915	*In charge*, A. J. Nicoll. *Local Correspondent*, W. W. Smallwood, Warsaw.
Yates........	Benton...........	Feb. 8, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Russell Chapman, R. D. 9, Penn Yan.
	Branchport.......	Feb. 9, 1915	*In charge*, D. P. Witter. *Local Correspondent*, Loyd Fullager, Branchport.
	Lakemont........	Feb. 11, 1915	*In charge*, D. P. Witter. *Local Correspondent*, H. J. Roof, R. D. 19, Dundee.
	Penn Yan........	Feb. 12–13,1915	*In charge*, D. P. Witter. *Local Correspondent*, Chas. M. Watkins, Penn Yan.
	Middlesex........	Feb. 22, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, Frank E. Dunton, Middlesex.
	Rushville.........	Feb. 23, 1915	*In charge*, J. G. Curtis. *Local Correspondent*, C. Earl James, Stanley.

The following Farmers' Institutes will be in charge of D. P. Witter, Berkshire, Tioga County.

DATE		PLACE	DATE		PLACE
1914			1915		
Nov.	30	Camden, Oneida Co.	Jan.	27	Central Square, Oswego Co.
Dec.	1	Amboy Center, Oswego Co.	"	28	Pennellville, Oswego Co.
"	2	Williamstown, Oswego Co.	"	29–30	Hannibal, Oswego Co.
"	3	Lacona, Oswego Co.	Feb.	1	Fair Haven, Cayuga Co.
"	4	Adams Center, Jefferson Co.	"	2	Red Creek, Wayne Co.
"	5	Barnes Corners, Lewis Co.	"	3	Huron, Wayne Co.
"	7	Henderson, Jefferson Co.	"	4	Phelps, Ontario Co.
"	8	Hounsfield, Jefferson Co.	"	5	Manchester, Ontario Co.
"	9	Calcium, Jefferson Co.	"	6	Reed Corners, Ontario Co.
"	10	St. Lawrence, Jefferson Co.	"	8	Benton, Yates Co.
"	11	La Fargeville, Jefferson Co.	"	9	Branchport, Yates Co.
"	12	Dexter, Jefferson Co.	"	10	Townsend, Schuyler Co.
"	14	Theresa, Jefferson Co.	"	11	Lakemont, Yates Co.
"	15	Plessis, Jefferson Co.	"	12–13	Penn Yan, Yates Co.
"	16	Brier Hill, St. Lawrence Co.	"	15	Pendleton Center, Niagara Co.
"	17	Natural Bridge, Jefferson Co.	"	16	Pekin, Niagara Co.
"	18	Denmark, Lewis Co.	"	17	Ransomville, Niagara Co.
"	19	Carthage, Jefferson Co.	"	18	Newfane, Niagara Co.
"	21–22	Beaver Falls, Lewis Co.	"	19	Johnsons Creek, Niagara Co.
			"	20	Middleport, Niagara Co.
1915			"	22	Rapids, Niagara Co.
Jan.	4	Fort Covington, Franklin Co.	"	23	West Shelby, Orleans Co.
"	5	Bombay, Franklin Co.	"	24	East Shelby, Orleans Co.
"	6–7	Brushton, Franklin Co.	"	25	Clarendon, Orleans Co.
"	8–9	Malone, Franklin Co.	"	26–27	Brockport, Monroe Co.
"	11	Lawrenceville, St. Lawrence Co.	Mar.	1	Barker, Niagara Co.
"	12	Nicholville, St. Lawrence Co.	"	2	Lyndonville, Orleans Co.
"	13	Lisbon, St. Lawrence Co.	"	3	Kendall, Orleans Co.
"	14	Waddington, St. Lawrence Co.	"	4	Murray, Orleans Co.
"	15	Norfolk, St. Lawrence Co.	"	5–6	Webster, Monroe Co.
"	16	Potsdam, St. Lawrence Co.	"	8	Greece, Monroe Co.
"	18	Pulaski, Oswego Co.	"	9	Spencerport, Monroe Co.
"	19	Mexico, Oswego Co.	"	10	Gates Center, Monroe Co.
"	20	North Scriba, Oswego Co.	"	11	West Henrietta, Monroe Co.
"	21	Parish, Oswego Co.	"	12	Pittsford, Monroe Co.
"	22–23	Baldwinsville, Onondaga Co.	"	13	Fairport, Monroe Co.
"	25	Lysander, Onondaga Co.	"	15	Lincoln, Wayne Co.
"	26	Bernhards Bay, Oswego Co.			

The following Farmers' Institutes will be in charge of A. J, Nicoll, Delhi, Delaware County.

DATE		PLACE
1914		
Nov.	20	Boonville, Oneida Co.
“	21	West Leyden, Lewis Co.
“	23	Greig, Lewis Co.
“	24	Talcottville, Lewis Co.
“	30	Freehold, Greene Co.
Dec.	1	Medusa, Albany Co.
“	2	Rensselaerville, Albany Co.
“	3	Broome Center, Schoharie Co.
“	4	Breakabeen, Schoharie Co.
“	5	Fultonham, Schoharie Co.
“	7	Carlisle, Schoharie Co.
“	8	Hyndsville, Schoharie Co.
“	9	Cherry Valley, Otsego Co.
“	10	Pierstown, Otsego Co.
“	11	Westville, Otsego Co.
“	12	Fly Creek, Otsego Co.
“	14–15	Norwich, Chenango Co.
“	16	Mt. Vision, Otsego Co.
“	17	Morris, Otsego Co.
“	18	Edmeston, Otsego Co.
“	19	New Berlin, Chenango Co.
“	21	Hubbardsville, Madison Co.
“	22–23	Brookfield, Madison Co.
1915		
Jan.	4	Deposit, Broome Co.
“	5	Windsor, Broome Co.
“	6	North Colesville, Broome Co.
“	7	Speedsville, Tompkins Co.
“	8	Flemingville, Tioga Co.
“	9	Vestal, Broome Co.
“	11	Greene, Chenango Co.
“	12	Beaver Meadows, Chenango Co.
“	13	Earlville, Madison Co.
“	14	Hamilton, Madison Co.
“	15–16	Stockbridge, Madison Co.
“	18	Madison, Madison Co.
“	19	Knoxboro, Oneida Co.
“	20	Erieville, Madison Co.
“	21	North Manlius, Onondaga Co.
“	22–23	Manlius, Onondaga Co.
“	25	Camillus, Onondaga Co.
“	26	Borodino, Onondaga Co.
“	27	South Onondaga, Onondaga Co.

DATE		PLACE
1915		
Jan.	28	La Fayette, Onondaga Co.
“	29	Preble, Cortland Co.
“	30	Cortland, Cortland Co.
Feb.	1	Cincinnatus, Cortland Co.
“	2	McDonough, Chenango Co.
“	3	Willett, Cortland Co.
“	4	Lisle, Broome Co.
“	5	Marathon, Cortland Co.
“	6	Texas Valley, Cortland Co.
“	8	Corfu, Genesee Co.
“	9	Darien, Genesee Co.
“	10	Cowlesville, Wyoming Co.
“	11	Alden, Erie Co.
“	12	Bethany Center, Genesee Co.
“	13	Alexander, Genesee Co.
“	15	Varysburg, Wyoming Co.
“	16	Arcade, Wyoming Co.
“	17	Curriers, Wyoming Co.
“	18	Bliss, Wyoming Co.
“	19	Castile, Wyoming Co.
“	20	Warsaw, Wyoming Co.
“	22	Greigsville, Livingston Co.
“	23	Linwood, Livingston Co.
“	24	Pavilion Center, Genesee Co.
“	25	Fort Hill, Genesee Co.
“	26–27	Caledonia, Livingston Co.
Mar.	1	Conesus, Livingston Co.
“	2	Springwater, Livingston Co.
“	3	Atlanta, Steuben Co.
“	4	Naples, Ontario Co.
“	5	Bristol Springs, Ontario Co.
“	6	Waterloo, Seneca Co.
“	8	Romulus, Seneca Co.
“	9	Covert, Seneca Co.
“	10	Ovid Grange, Scott's Corners, Seneca Co.
“	11	Valois, Schuyler Co.
“	12	Burdett, Schuyler Co.
“	13	Catherine, Schuyler Co.
“	15	Slaterville Springs, Tompkins Co.
“	16	Locke, Cayuga Co.
“	17	Moravia, Cayuga Co.
“	18	Scipioville, Cayuga Co.

The following Farmers' Institutes will be in charge of R. P. McPherson, Le Roy, Genesee County.

DATE	PLACE
1914	
Nov. 19	Wayne, Schuyler Co.
" 20	North Urbana, Steuben Co.
" 21	Savona, Steuben Co.
" 23	Prattsburg, Steuben Co.
" 24	Ingleside, Steuben Co.
" 30	Fort Miller, Washington Co.
Dec. 1	Wayville, Saratoga Co.
" 2	Gansevoort, Saratoga Co.
" 3	Fort Ann, Washington Co.
" 4	North Granville, Washington Co.
" 5	Hartford, Washington Co.
" 7	Argyle, Washington Co.
" 8	West Hebron, Washington Co.
" 9	Salem, Washington Co.
" 10	Cambridge, Washington Co.
" 11	Easton, Washington Co.
" 12	Glens Falls, Warren Co.
" 14	Berlin, Rensselaer Co.
" 15	Hoosick Falls, Rensselaer Co.
" 16	Johnsonville, Rensselaer Co.
" 17	Eagle Mills, Rensselaer Co.
" 18	Raymertown, Rensselaer Co.
" 19	Malta, Saratoga Co.
" 21	Clifton Park Center, Saratoga Co.
" 22	West Sand Lake, Rensselaer Co.
1915	
Jan. 4	Voorheesville, Albany Co.
" 5	Guilderland Center, Albany Co.
" 6	Delmar, Albany Co.
" 7	Coeymans Hollow, Albany Co.
" 8	West Coxsackie, Greene Co.
" 9	Leeds, Greene Co.
" 11	Woodstock, Ulster Co.
" 12	Lake Katrine, Ulster Co.
" 13	Stone Ridge, Ulster Co.
" 14	Gardiner, Ulster Co.
" 15	Plattekill, Ulster Co.
" 16	Port Jervis, Orange Co.
" 18	Balmville, Orange Co.
" 19	Middletown, Orange Co.
" 20	Unionville, Orange Co.
" 21	Otisville, Orange Co.
" 22	Pine Bush, Orange Co
" 23	Bullville, Orange Co.
25–26	Tallmans, Rockland Co.
1915	
Jan. 27	Cortland Grange, Peekskill, Westchester Co.
" 28	Adams Corners, Putnam Co.
" 29	Mahopac, Putnam Co.
" 30	Lincolndale, Westchester Co.
Feb. 1	Pawling, Dutchess Co.
" 2	Patterson, Putnam Co.
" 3	Union Vale, Dutchess Co.
" 4	Moores Mills, Dutchess Co.
" 5	Wiccopee, Dutchess Co.
" 6	Myers Corners, Dutchess Co.
" 8–9	Clinton Corners, Dutchess Co.
" 10	Hyde Park, Dutchess Co.
" 11	Pleasant Plains, Dutchess Co.
" 12	Upper Red Hook, Dutchess Co.
" 13	Claverack, Columbia Co.
" 15	Livingston, Columbia Co.
" 16	Mellenville, Columbia Co.
" 17	Copake, Columbia Co.
" 18	East Chatham, Columbia Co.
" 19	New Lebanon, Columbia Co.
" 20	Spencertown, Columbia Co.
" 22	Melrose, Rensselaer Co.
" 23	Galway, Saratoga Co.
" 24	Minaville, Montgomery Co.
" 25	Glen, Montgomery Co.
" 26	Charleston Four Corners, Montgomery Co.
" 27	Seeber's Lane Grange, Canajoharie, Montgomery Co.
Mar. 1	Freysbush, Montgomery Co.
" 2	St. Johnsville, Montgomery Co.
" 3	Van Hornesville, Herkimer Co.
" 4	Jordanville, Herkimer Co.
" 5	West Winfield, Herkimer Co.
" 6	Frankfort, Herkimer Co.
" 8	Dolgeville, Herkimer Co.
" 9	Poland, Herkimer Co.
" 10	Russia, Herkimer Co.
" 11	Marcy, Oneida Co.
" 12	Sauquoit, Oneida Co.
" 13	Rome, Oneida Co.
" 15	Canastota, Madison Co.
" 16	Fenner, Madison Co.
" 17	De Ruyter, Madison Co.
" 18	Freeville, Tompkins Co.

The following Farmers' Institutes will be in charge of Jared Van Wagenen, Jr., Lawyersville, Schoharie County.

DATE	PLACE	DATE	PLACE
1914		1914	
Nov. 19	Nelson, Madison Co.	Dec. 18	Westport, Essex Co.
" 30	Philadelphia, Jefferson Co.	" 19	Crown Point, Essex Co.
Dec. 1	Fine, St. Lawrence Co.	" 21	Moriah, Essex Co.
" 2	Edwards, St. Lawrence Co.	" 22	Putnam, Washington Co.
" 3	Russell, St. Lawrence Co.	" 23	Whitehall, Washington Co.
" 4	Rensselaer Falls, St. Lawrence Co.	" 28	Duanesburg, Schenectady Co.
" 5	Massena, St. Lawrence Co.	" 29	Pattersonville, Schenectady Co.
" 7	Winthrop, St. Lawrence Co.	" 30	Glenville, Schenectady Co.
" 8	Chateaugay, Franklin Co.		
" 9	Ellenburg Depot, Clinton Co.	1915	
" 10	Ellenburg Center, Clinton Co.	Jan. 12–13	Bridgehampton, Suffolk Co.
" 11	Altona, Clinton Co.	" 14	Orient, Suffolk Co.
" 12	Champlain, Clinton Co.	" 15	Southold, Suffolk Co.
" 14	Saranac, Clinton Co.	" 16	Sound Ave., Suffolk Co.
" 15	Morrisonville, Clinton Co.	" 18	Port Jefferson, Suffolk Co.
" 16	Jay, Essex Co.	" 19	East Northport, Suffolk Co.
" 17	Willsboro, Essex Co.	" 20–21	Mineola, Nassau Co.

The following Farmers' Institutes will be in charge of J. G. Curtis, P. O. Box 272, Rochester, Monroe County.

DATE	PLACE	DATE	PLACE
1915		1915	
Jan. 4	Churchville, Monroe Co.	Feb. 9	Hunters Creek, Erie Co.
" 5	South Byron, Genesee Co.	" 10	Chaffee, Erie Co.
" 6	Elba, Genesee Co.	" 11	Delevan, Cattaraugus Co.
" 7	Oakfield, Genesee Co.	" 12	Ischua, Cattaraugus Co.
" 8	Clarence Center, Erie Co.	" 13	Hinsdale, Cattaraugus Co.
" 9	Bowmansville, Erie Co.	" 15	West Bloomfield, Ontario Co.
11	Collins Center, Erie Co.	" 16	Victor, Ontario Co.
" 12	Brant, Erie Co.	" 17	Farmington, Ontario Co.
" 13–14	Forestville, Chautauqua Co.	" 18	Clyde, Wayne Co.
" 15–16	Ripley, Chautauqua Co.	" 19	South Butler, Wayne Co.
" 18	Arkwright, Chautauqua Co.	" 20	Conquest, Cayuga Co.
" 19	Cassadaga, Chautauqua Co.	" 22	Middlesex, Yates Co.
" 20–21	Charlotte Center, Chautauqua Co.	" 23	Rushville, Yates Co.
" 22	Gerry, Chautauqua Co.	" 24	Port Byron, Cayuga Co.
" 23	Jamestown, Chautauqua Co.	" 25	Jordan, Onondaga Co.
" 25	Niobe, Chautauqua Co.	" 26	Sennett, Cayuga Co.
" 26	Mayville, Chautauqua Co.	" 27	East Lansing, Tompkims Co.
" 27	Stedman, Chautauqua Co.	Mar. 1	Lansing, Tompkins Co.
" 28	Conewango Valley, Cattaraugus Co.	" 2	Five Corners, Cayuga Co.
" 29–30	Cherry Creek, Chautauqua Co.	" 3	East Venice, Cayuga Co.
Feb. 1–2	Cottage, Cattaraugus Co.	" 4	North Harford, Cortland Co.
" 3	Cattaraugus, Cattaraugus Co.	" 5	Freetown Corners, Cortland Co.
" 4	Elkdale, Cattaraugus Co.	" 6	Homer, Cortland Co.
" 5	Ashford Hollow, Cattaraugus Co.	" 8	Marion, Wayne Co.
" 6	Springville, Erie Co.	" 9–10	Savannah, Wayne Co.
" 8	Griffins Mills, Erie Co.	" 11	Reading Center, Schuyler Co.

The following Farmers' Institutes will be in charge of William Hotaling, Kinderhook, Columbia County.

DATE	PLACE	DATE	PLACE
1914		1914	
Oct. 27	Chestertown, Warren Co.	Oct. 30	Wevertown, Warren Co.
" 28	Queensburg, Warren Co.	" 31	Wilton, Saratoga Co.
" 29	Olmstedville, Essex Co.		

The following Farmers' Institutes will be in charge of C. R. White, Ionia, Ontario County.

DATE	PLACE	DATE	PLACE
1915		1915	
Feb. 15	Caneadea, Allegany Co.	Mar. 3	Addison, Steuben Co.
" 16	Bolivar, Allegany Co.	" 4	Caton, Steuben Co.
" 17	Friendship, Allegany Co.	" 5	Veteran Grange, Chemung Co.
" 18	Scio, Allegany Co.	" 6	Horseheads, Chemung Co.
" 19	Angelica, Allegany Co.	8	Erin, Chemung Co.
" 20	Canaseraga, Allegany Co.	" 9	Hicks, Chemung Co.
" 22	Stephens Mills, Steuben Co.	" 10	Chemung, Chemung Co.
" 23	Almond, Allegany Co.	" 11	Nichols, Tioga Co.
" 24	Greenwood, Steuben Co.	" 12–13	Apalachin, Tioga Co.
" 25	Whitesville, Allegany Co.	" 15	Barton Center, Tioga Co.
" 26	Howard, Steuben Co.	" 16	Spencer, Tioga Co.
" 27	Bath, Steuben Co.	" 17	Danby, Tompkins Co.
Mar. 1	Thurston, Steuben Co.	" 18	Enfield Center, Tompkins Co.
" 2	Rathbone, Steuben Co.		

The following Farmers' Institutes will be in charge of R. P. Trask, North Wilbraham, Mass.

DATE	PLACE	DATE	PLACE
1914		1914	
Nov. 30	Lake Huntington, Sullivan Co.	Dec. 12	East Meredith, Delaware Co.
Dec. 1	Youngsville, Sullivan Co.	" 14	Stamford, Delaware Co.
" 2	Bloomingburg, Sullivan Co.	" 15	Manorkill, Schoharie Co.
" 3	Hurleyville, Sullivan Co.	" 16	Prattsville, Greene Co.
4	Grahamsville, Sullivan Co.	" 17	Halcott Center, Greene Co.
5	Liberty, Sullivan Co.	" 18	Halcottsville, Delaware Co.
" 7	Hancock, Delaware Co.	" 19	Worcester, Otsego Co.
" 8	Downsville, Delaware Co.	" 21	Otego, Otsego Co.
" 9	Walton, Delaware Co.	" 22	West Bainbridge, Chenango Co.
" 10	Sidney Center, Delaware Co.	" 23	Harpursville, Broome Co.
" 11	Franklin, Delaware Co.		

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